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American Aviation

The Independent Voice of American Aeronautics **JANUARY 15, 1944**

Constructive Legislation

THE VARIOUS efforts now being made to reconcile contrasting views in the pending Lea bill (H. R. 3420) are encouraging and it behooves all aviation interests who want to see constructive legislation enacted to cooperate toward that end.

Fortnightly Review

During 1943 the maneuverings on the Lea bill were somewhat a travesty of errors. There are some who will resent this term being applied to their activities, but the truth is that no well-founded preparation for a needed and important national legislative act had been made. Yet there is so much of value and merit in the Lea measure that every effort should be made to salvage the useful parts.

Early in 1943 the Lea bill was bounced into the aviation arena by the Lea committee primarily as a means of stopping the Nichols movement to create a standing committee on aviation in the House. The bill had been hastily prepared and rushed into motion. Some of its content was vitally needed to amend the Civil Aeronautics Act of 1938, other parts were needed for clarification. Some new material was added and eventually the bill called for the creation of a new independent Civil Aeronautics Commission.

What resulted was an omnibus bill in which everything but the kitchen sink had been thrown. Instead of merely amending and clarifying the Civil Aeronautics Act of 1938, it took the form of a brand new major piece of legislation.

Within the past three or four months the Lea bill has kicked up a terrific storm in the states, and sides were drawn for and against a bill that few had actually read and few could really

(Turn to page 9)

Heads ACCA Department

John E. P. Morgan has been appointed manager of the new Personal Aircraft Department of the Aeronautical Chamber of Commerce. The department began operations Jan. 1.

(Story on page 32)

Late Bulletins

P-61 Announced

After many months of secrecy, the new P-61 "Black Widow" night fighter, made by Northrop Aircraft Inc., has been formally announced by the War Dept. The P-61 is heavily armed, powered by two Pratt & Whitney engines and is described as having "a fairly long range and effective speed and climb . . ."

Take Action on Lee

A subcommittee of the Senate Commerce Committee on Jan. 11 recommended favorably to the full committee the nomination of Josh Lee as a member of the Civil Aeronautics Board. There was no controversy in the subcommittee on the nomination, officials said.

Trend of the News

Busy Year: This year promises to be the busiest in CAB history. As this issue went to press, hearing had opened on the controversial Denver-Los Angeles case, involving four airlines, and other important hearings will follow soon. CAB has 125 dockets under active consideration, ranging from some which have been assigned pre-hearing conferences to others awaiting final decision. In these 125 are 14 new carriers. A substantial number of cases involving other new carriers will be assigned by early spring. However, the fact remains that many new applicants do not want early action on their cases, because many of their officials are in military service or other war work. But even discounting these, the CAB by year end should have many important cases either decided or awaiting decision.

State Legislation: Some state legislatures are expected to take action shortly to set the record straight on which state agency has jurisdiction over intrastate air routes. Latest activity on such routes is reported from Mississippi, where the Public Service Commission met last month to consider applications of Magnolia State Airways, South Mississippi Airways and Cox Airways, proceeding on the strength of a statement by the state's assistant Attorney General that PSC had "implied jurisdiction." Following hearing, a PSC member was quoted as saying that the routes would be granted as soon as duplications were eliminated. However, after meeting again early this month, the PSC apparently decided to await legislative action. The question of jurisdiction is a problem facing many other states also.

Organization: Look for discussion in connection with the slowly moving reorganization of the Aeronautical Chamber of Commerce to hinge around the pattern of the National Aircraft War Production Council, perhaps even involving eventual transition of the council functions into those of the trade association. Eastern manufacturers are strong for this idea which also might provide the key to top Aero Chamber personnel.

Air Supremacy: High sources in Washington conservatively estimate that on one day recently we had in the air over Europe considerably more men than one full Army divi-

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20c

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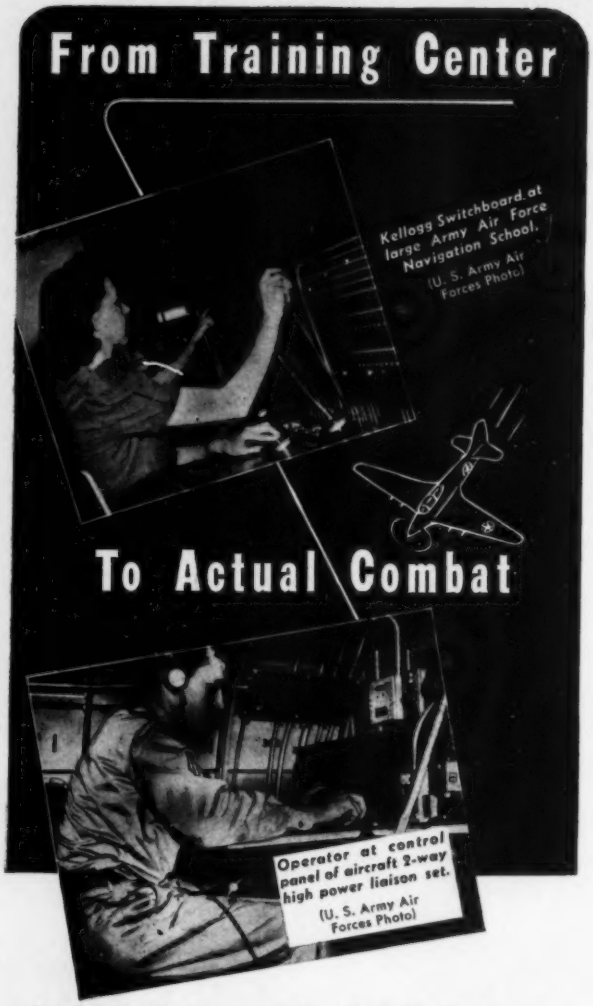
From Training Center
Kellogg Switchboard at large Army Air Force Navigation School. (U. S. Army Air Forces Photo)
To Actual Combat
Operator at control panel of aircraft 2-way high power liaison set. (U. S. Army Air Forces Photo)

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American Aviation

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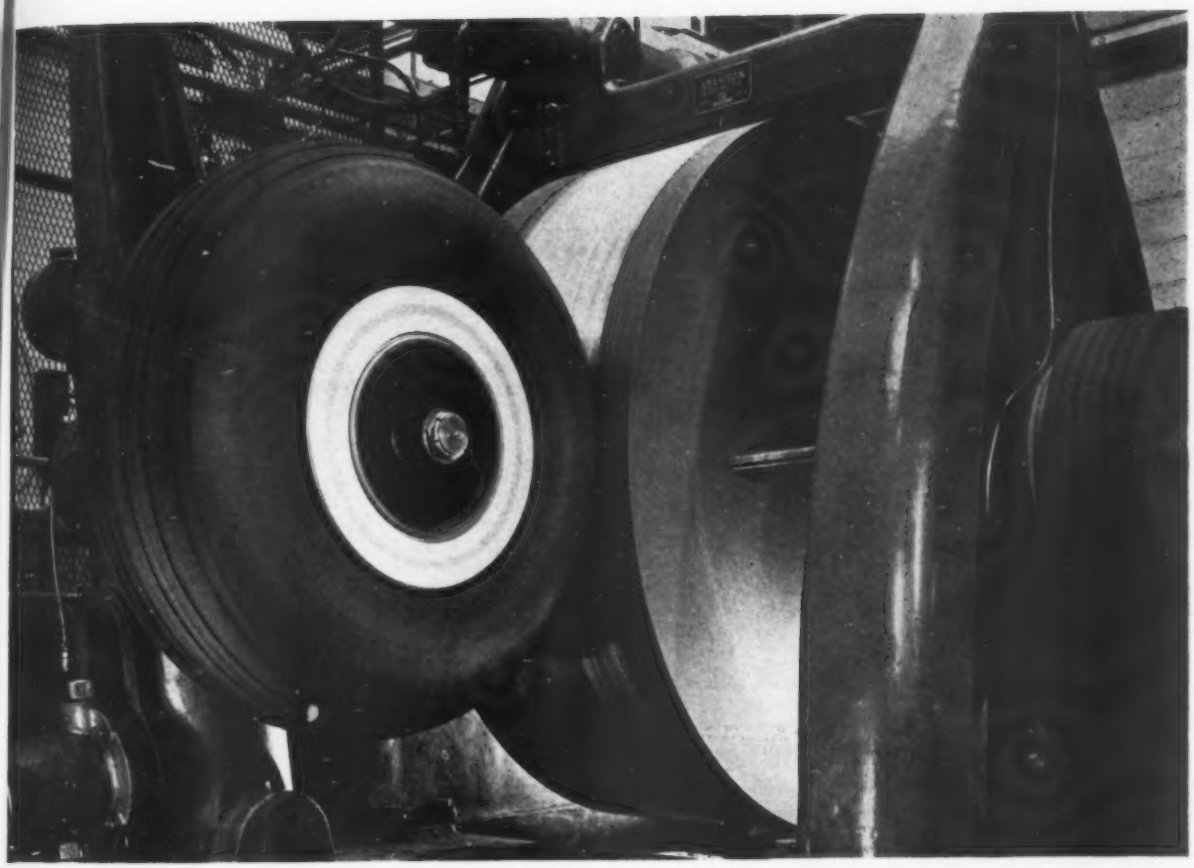

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ARMY E NAVY

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Trends

(Continued from page 1)

sion, and the loss of men on that day was negligible—certain nothing to compare with the loss from a comparable land i vasion. As to supremacy in the air: Allied planes can now anywhere they wish over Europe and at the same time th can prevent Axis planes from reaching our installations, a though officials cautiously point out that the Luftwaffe is n yet beaten. Nazi fighters are currently being shot down at higher rate than their output. Losses of the Eighth Air For in December were only 2.6%.

Public Discussion: There may be more public discussio and less hush-hush, on the subject of postwar air transpo policy, some sources believe. They base their belief on clai that the President is soon to receive a summarized statement developments to date, enabling him to discuss the subject greater detail. They believe that the President's hesitancy express more detailed views on air policy at a recent press con ference was due to his reluctance to make any commitmen before studying the complete findings of the interdepartmenta committee. Also expected to bring discussions into the open the intention of Sen. Bennett Champ Clark (D., Mo.), chairma of the Senate Commerce Committee's aviation subcommittee, t hold public hearings on postwar air policy as soon as executiv sessions on the subject are concluded. The subcommittee ha almost completed testimony of witnesses in executive session having heard from Juan T. Trippe, president of Pan America Airways; W. A. Patterson, president of United Air Lines; S. Solomon, president of Northeast and chairman of the airline air policy committee; Ralph S. Damon, vice president of Ameri can Airlines; CAB Chairman L. Welch Pogue, and Assistan Secretary of State Adolf A. Berle.

Realistic: Although the aircraft goal for 1944 calls fo 40,000 tons per month, twice the tonnage of 1943, Under Secre tary of War Robert Patterson declared at last week's war industrial conference on the West Coast that it is a realist schedule. He emphasized that manpower in aircraft productio has not yet reached its peak and there is no prospect of layo for industry workers. Patterson also took occasion to say th rumors that Eastern plants will be able to convert to civilia production shortly after the war in Europe ends, while Weste plants are still turning out planes for the Japanese war, ar entirely unfounded.

Another Headache: West Coast aircraft manufacture are attempting to anticipate another serious headache whic they see coming with the shift of emphasis to the Pacific wa This is an almost certain shortage of gasoline for workers wh depend on automobile transportation to the plants. Only 45% of the gasoline in California goes to civilian use, and dealer currently are cut to 75% of their combined October-Novembe average. In San Diego and Los Angeles many stations hav been running out of gasoline. The Western Procurement Dis trict has proposed to the Petroleum Administrator for Wa that service stations in aircraft areas be permitted to sell onl to aircraft workers. Diversion of tankers and other steps t relieve the shortage also are being proposed.

Face Re-election: Six of the 19 Senators now member of the Senate's Commerce Committee, which is expected to pla an important role in the formulation of the nation's postwa air policy, face re-election this year. They are Hattie W Caraway (D., Ark.), Bennett Champ Clark (D., Mo.), John H. Overton (D., La.), Claude Pepper (D., Fla.), Pat McCarra (D., Nev.), and Alexander Wiley (R., Wis.). Clark is chairma of the Commerce Committee's aviation subcommittee, an Caraway and McCarran are members.

British Proposal: A suggestion that the Three Powe Commission, authorized to be established in London by th Moscow Conference, become the agency for internationa negotiations on postwar air transport policy has been made i the British House of Commons by Lt. Col. Sir Thomas Moore M.P. Commenting on the proposal, Prime Minister Churchil said: "It would not do for me to make any statement abou the Three-Power agenda without having consulted other parties, but undoubtedly civil air policy will have to be dis cussed between all parties, great and small."

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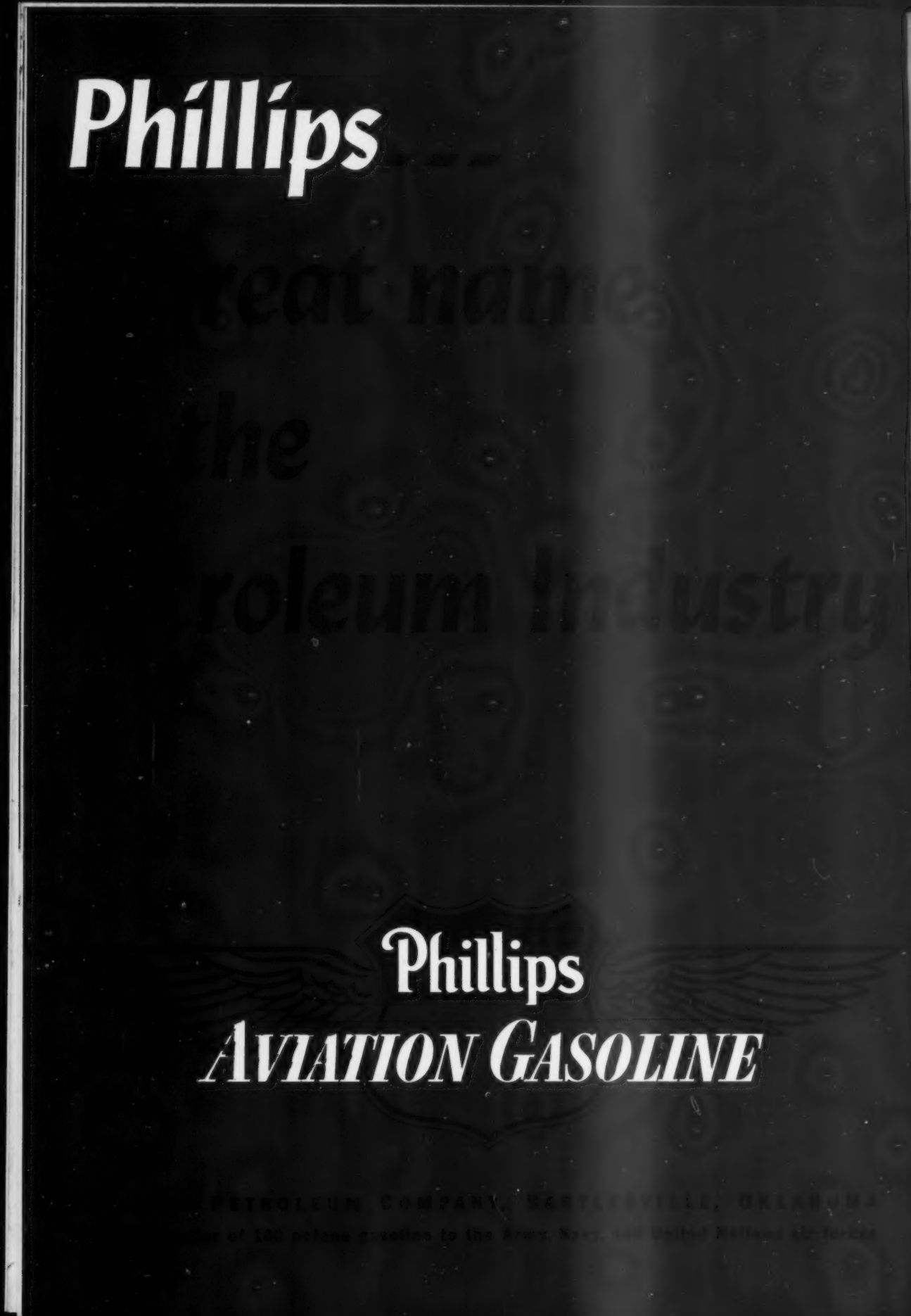
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AVIATION GASOLINE

Editorial

(Continued from page 1)

understand with proper perspective. Most disturbing of all was the appearance of a number of new "champions of freedom" who sought to show that private aviation was doomed to a slow death under the Lea measure, but who actually, it is strongly suspected, have disguised some very special interests under a kindly cloak of freedom for the private flyer.

The airlines of the nation need legislation. It is unfortunate that the necessary amendments were not culled out for immediate action instead of lumping them into an omnibus bill. Generally speaking the state aviation bodies want to be cooperative but some of them have been scared out of their wits for fear that they may lose something by the act. Some of the states are sincere. Some others have raised a fighting flag merely because someone said there was a fight against states' rights.

The primary mistakes in the handling of the Lea bill are within aviation itself, and most of the airlines who want to see the legislation enacted are now willing to admit that they did not take the necessary time to work on the bill with other aviation interests, such as private flyers, state aviation commissions, and the like. The efforts to reconcile differences of opinions should have been made long ago. No effort to obtain national legislation should ever be made without the bulk of aviation interests solidly behind it—at the start.

Most aviation opponents of the Lea bill are opposed only to a few sections. Few aviation opponents want to hold up a piece of legislation that is largely beneficial to all. It is unfortunate that certain aviation groups find themselves on the same side of the fence as the railroads and other interests who would be expected to oppose any measure fostering aviation. Had Colonel Edgar S. Gorrell, president of the Air Transport Association, sought the advice, counsel and support of all aviation groups at the outset, and tempered the bill to meet the desires of a majority, there would not be this unfortunate conflict within the aviation fraternity itself.

Meantime there should be freedom of discussion among all aviation groups and the differences ironed out to the greatest degree possible. The charlatans, the phonies, the johnny-come-latelys, who have barged into an internal aviation fight for special disguised interests, can be eliminated through constructive discussions by real aviation representatives. What is desired by all is uniform, healthy federal legislation with a retention by states of their rightful prerogatives, with protection for common carriers and freedom for the private flyer.

NAA Partisanship

THE National Aeronautic Association which is supposed to represent broadly all aviation interests picked up a hot potato when it delved hurriedly into the Lea Bill at its Oklahoma City board of directors meeting. At a short breakfast session it decided that it was opposed to the Lea Bill in its present form and named a committee to draft the reasons for its position. Some weeks before the next meeting of the board, which was to have been held on January 15 after this editorial was written, the NAA widely distributed the committee's report, which was to say that the NAA had taken quite a positive position on the bill.

Actually, the report of the committee headed by George Logan, general counsel for the National Association of State Aviation Officials, is a vast disappointment. It is misleading. It opposes features of the bill which have been the law of the United States since August, 1938. It has placed erroneous interpretations on many features of the bill. It most assuredly does not represent the studied and measured views of the NAA board of directors, or the chapters, or the membership at large. It was presumptious for the report to have been distributed and publicized before examination by the board of directors. And most of all, if the NAA is to maintain a representative viewpoint for all aviation interests, the general counsel for the state aviation officials should never have been made chairman of the committee.

We don't question Mr. Logan's right to appear in any way he sees fit on behalf of the state aviation officials, but it is interesting to note that Mr. Logan rarely appears at an NAA board meeting. It is both interesting and disturbing that his prematurely-released report should have been so misleading and vulnerable. We are for ironing out the few real disputes in the Lea Bill, but nothing is accomplished by raising an alarm over ghosts. The Logan maneuvering is a challenge to NAA to regard its responsibilities and leadership with a more serious care.

Making a Start

NOW THAT a personal aircraft department has been established within the Aeronautical Chamber of Commerce, and headed by capable John E. P. Morgan, a real start can be made in tackling some of private aviation's knotty problems. It seems to us as we sit on the sidelines that there are two very useful projects which this department could undertake at once. Neither is likely to find an immediate solution but the sooner they are approached, the sooner the achievement of certain goals on behalf of the private flyer.

First is the perplexing matter of civil air regulations. In common with many others, we pounce on the "federal cossacks" who make life miserable for the individual flyer. But we also realize that mere criticism is not going to bring about effective results. It is as true today as it has always been that the government men in charge of writing, modifying and enforcing the civil air regulations get negligible help from the outside on improving them. In the final analysis it is unfair to those who are trying to do an honest job in federal service to criticize without offering suggestions.

So we would list as the No. 1 project for Mr. Morgan's new department the job of drawing up what private flyers and manufacturers consider to be a model set of regulations. The job is more difficult than it seems at first. Freedom of flying cannot be obtained simply

(Turn to page 13)

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ON this page are pictured just a few of the Martin firsts which help make U. S. aircraft second to none. Other Martin developments are still cloaked in military secrecy, while numerous others, individually minor but collectively important, are in use throughout the aviation industry to give America better planes and more of them. Vital to victory today, these Martin firsts will play outstanding peacetime roles tomorrow, not only in aviation, but in scores of diverse industrial fields. Post-war products of every sort may bear the words "Made by Martin" as a guarantee of excellence.

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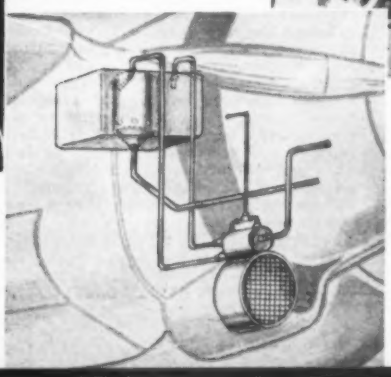

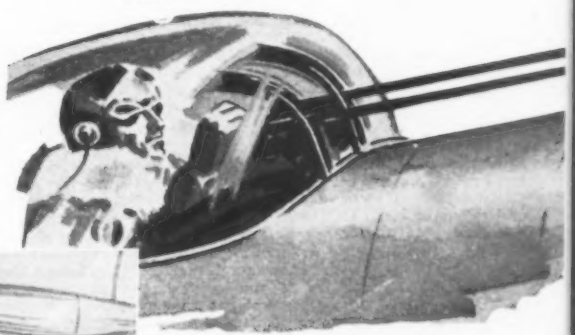

POWER TURRETS like this (above) . . . developed and manufactured by Martin . . . are now standard on many types of U. S. aircraft. America's first power-operated gun turret appeared on the Navy's Martin PBM-1 patrol bomber back in 1937.

Letters

Kansas City, 6, Mo.
Jan. 3, 1944

To the Editor:

An editorial in the Traffic World of December 4, 1943, apparently reflecting railroad interests' opinion, bemoans those sections of the Lea Bill which proposes financial aid to airports and airlines.

It has become habitual with the railroad industry to become worried about "opening the door to Federal Expenditures" when means of transportation other than railroads are being developed. These interests conveniently forget the public gift of millions of acres of land at the time that railroads were being built, as well as other continuous successes in obtaining Federal aid.

It is also recalled that the railroad interests were economy conscious on the subject of highway construction and improvement when the public in increasing numbers grew tired of traveling on outmoded, uncomfortable and inadequate railroad equipment and turned to the comfort and convenience of travel by private automobile.

Now comes the airplane and the need for airports, and the railroads again object. The railroads, however, cheerfully outmoded the canal boat and the stage coach, but that is forgotten in the fear that air transportation will take away some of the railroad passenger traffic. Most railroads say that they lose money on passenger business. If this is true, one would think that the railroads would be glad to get rid of the unprofitable passenger business, but apparently their pride in the "de luxe" and "limited" passenger trains blinds them to the fact that they would probably be better off if all passenger traffic (except commutation) moved up to the HIGH-ways of the air.

R. E. LEES
Director, Economics Division,
Transcontinental & Western Air, Inc.

Chicago, Ill.
Jan. 5, 1944

To the Editor:

Reading your excellent issue of American Aviation for January, I noticed your editorial, "Comforts in Chicago." As Chairman of the Chicago Aero Commission (for about seventeen years) I have been in very close touch with aviation matters in the Chicago area. I am in complete agreement with your statements concerning the inadequacy of facilities at the Municipal Airport.

You are misinformed, however, concerning the "Mayor's welcome room upstairs." Every foot of available space at the airport is occupied.

Regarding your suggestions for more seats in the waiting room, this matter has been surveyed by experts who decided it would merely add to the congestion to put in more seats.

You said: "There are many ways Chicago Airport could make room for passengers if the management and the city had sufficient pride and initiative. Can't something be done about it" For your information we have had, for over two years, complete plans for the expenditure of $1,250,000 for a new Administration Building and air terminal. All we need are priorities on labor and material to start construction immediately. The money is held in escrow.

We would be interested, meanwhile, in your statement that there are many ways Chicago Airport could make room for passengers. I should like to learn what you have in mind. Be assured that Mayor Kelly, the City Council, the Chicago Aero Commission, the Chicago Plan Commission, and the Chicago Association of Commerce, are acutely conscious of the problem which confronts us and would welcome any suggestions you may have not only for alleviation of the current situation at the Chicago Municipal Airport, but for additional airports to take care of air traffic a few years hence when our present airport will be entirely inadequate.

MERRILL C. MEIGS, Chairman
Chicago Aero Commission

(Editor's Note: Thanks to able Merrill Meigs for constructive light on Chicago's airport situation.)

New York City
Jan. 5, 1944

To the Editor:

After reading the January 1 issue I am wondering if you people know that there are other airlines besides Continental? You know we have some air transportation that isn't half bad back here in the east. We may not hit all the mountain villages of the spacious west, but people do travel by air back here and a few places are served by airlines. What has Continental done to deserve all this attention?

J. K. M.

(Editor's Note: You got us, chum. We can't think of a thing to say.)

Geneva, N. Y.
Jan. 5, 1944

To the Editor:

It was a pleasure to read your splendid article in the December 15 issue on "Freedom for the Private Flyer."

Being a business man who has already placed an order for a private plane for delivery when production is available again for civilian use, your well-written article should have serious consideration when the new or revised laws for private flyers are acted upon by CAB.

Those of us who have the confidence in air travel by placing orders for private planes will look forward to Civil Air Regulations for protection so that the freedom of flying will be the safest method of travel in the years to come.

J. H. DEFFNER
Shuron Optical Company, Inc.

Washington, D. C.
Dec. 20, 1943

To the Editor:

I just read your St. Louis speech in your Dec. 15 issue and got a grand kick out of it. You said more than all the committees and associations put together have said yet for the private flyer. May I add a lusty cheer.

Now comes the $64 question: How do we do what you suggest? How do we get the CAA to burn up all the books and go out of business as far as the *private flyer* and the *personal aircraft manufacturer* are concerned. The trouble with rules is that they are easy as hell to think up and hard as hell to get off the books.

JOHN E. P. MORGAN, Mgr.
Personal Aircraft Dept.
Aeronautical Chamber of Commerce

(Editor's Note: Both CAA and CAB complain that everybody kicks about the regulations but nobody ever comes across with constructive suggestions for simplification. They say the response to proposed revisions has been negligible. How about the personal aircraft department of the Aero Chamber drafting a complete set of regulations the way the flyers and manufacturers would like to see them issued? It is probably true that no one outside of CAA and CAB has ever attempted the job, but it seems to us that such a plan might bring forth good results.)

New York, N. Y.
January 3, 1944

To the Editor:

I have had my first hearty laugh of the year reading your account of the Wright Dinner. You let me off easy. The Institute had nothing to do with the dinner except to provide the staff to send out the invitations which lists were sent by the NACA, the ACCA, and the ATA, the presidents of which were on the committee.

The capacity of the ball room was sold out three days before the dinner but they put three extra tables in on the last day to accommodate 36 late comers.

I had nothing to do with the seating nor the program but I am sure that you will be glad to know that I am sending to Mr. Jesse Jones a sizable check to go to the Army Air Forces Aid Society.

LESTER D. GARDNER,
Chairman of the Council
Institute of the Aeronautical Sciences

Books

TOMORROW WE FLY. By William B. Stout and Franklin M. Reck. Thomas Y. Crowell Co., New York. 160 pp. $2.00.

Brief, concise, and very much to the point, the authors have succeeded well in painting the air future of tomorrow. Everyone knows Bill Stout and one can see that he contributed much to the book, but on the other hand it is Reck's writing and production. It lacks Stout's colorful prose and imagination, but the average person will find plenty of meat to chew on.

It isn't as fairy-like as one might expect in a book dealing with postwar aviation. It makes no rash promises if you read carefully. Reck has treated his subject in conservative fashion although at times he may be inclined to be carried away by imagination. The luxury passenger air transports he describes are certainly possible, but economics of operation will govern passenger services and the trend will probably be toward plain and simple mass transportation rather than for transport planes outfitted with bars and with plenty of lounge rooms. Airlines will watch the space and weight economics very closely except on super-dooper services.

Reck covers everything from traffic and airports to cargo and global services. He's done a masterful job of boiling down a multitude of facts and opinions. He gives considerable attention to the roadable airplane and believes it has a great future and Stout's pioneering work comes in for a good play, as could well be expected. Reck doesn't rave on for chapter after chapter about how the airplane is going to re-make the world socially and politically. He merely says what we're going to have in the way of airplanes and what they are likely to do for the average person. It's a rational presentation and comes out at about the right time to hit the ready market for this type of book.

TARGET: GERMANY. 120 pp. Illustrated. Simon and Schuster, New York. $2.00.

This is the Army Air Forces' official story of the Eighth Bomber Command's first year over Europe. Excerpts have been published in *Life Magazine*. It is one of the "must" books for your library of the air war, for here is an official report handled and illustrated in exceptionally good fashion. It is to be hoped that a companion book will follow to carry on from August, 1943, which completed the first year of bombing by our own airmen.

In the foreword, General H. H. Arnold says the book "is a testament to American men and machines and an American idea. In the past twelve months, the men and machines have proved themselves against the fiercest aerial opposition in the world." The book lives up to every expectation. It is realistic it is human, factual, and effective. Unlike most records, it is well written and fascinating reading.

The greatest impression one gets is that America's air war in Europe has only now

(Turn to page 13)

FIRE ALONE could not produce the tough, lean efficiency of a fighting Aeroprop. True, fire can toughen its hollow, rib-reinforced steel blades, but the Aeroprop is tempered in many other ways.

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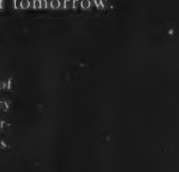


FREE: Write on company letterhead for "Seeds Of Industry"—a history of the Weatherhead facilities and products.

Editorial

(Continued from page 9)

by eliminating wholesale all regulations, but rather by drawing up those few traffic and certification rules that are necessary for everyone concerned. Why leave everything up to the CAA? Let private aviation bring forth *its* suggestions, and then move on from there.

A second knotty problem is airports. We have a letter from Les Schroeder, Minnesota's active and articulate aviation commissioner, pointing out that the personal aircraft manufacturers are far apart in their advice to communities that are planning airports or landing fields. One aircraft builder advised a Minnesota community to build landing strips on 20 to 30 acres of ground. Another manufacturer advised the same town to acquire between 100 and 150 acres. The CAA advised something else.

Wouldn't it be wise for the personal aircraft manufacturers to draw up typical airport plans for the use of communities? And wouldn't it be wise, too, to work out some sort of uniform approach to airport problems with the CAA? We are impressed by the confusion of hundreds of cities and towns over airport requirements. Obviously there is no one answer to these problems. But they can be classified and clarified. It would be a real service to aviation and cities alike.

Secretary of State for Air

ONE OF the great handicaps under which aviation has functioned in the federal government is its lack of high ranking status. In the War and Navy Departments we were without Assistant Secretaries for Air until just before we entered the war. The Army Air Forces has had a long and uncompleted struggle to pull itself out of a bureau status. Civil aviation has never reached cabinet rank and the nearest it has ever approached a mature status in government was in the short-lived independent Civil Aeronautics Authority.

The need for coordination and status is ever more apparent. In the Department of State aviation has ranked along wth peanuts, medicine, cod liver oil and other assorted and minor items. In other words, it is on a division level but even in this respect the authority of various aspects and controls is diffused within the Department.

Isn't it time that the United States gave recognition and rank to aviation in the Department of State through the creation of an Assistant Secretary for Air? There are a multitude of problems that should be filtered through one capable individual of standing within the Department. Postwar aviation will certainly be one of the topmost problems of this cabinet post and indeed, such problems are already in evidence and need attention.

It ought to be the business of the Assistant Secretary of State for Air to handle and guide our foreign relationships for aviation. One good man and about ten regional men scattered through the world at the right points could bring America's air commerce out on top. Even the institution of such a scheme would give the rest of the world fair warning that we were in the field aggressively to develop our potential peacetime air power. Today there is a sorry diffusion of effort scattered among many agencies with no able leader in the Department of State to coordinate and direct our foreign air activities.

Three Anniversaries

WE ARE proud to do honor this month to three notable milestones in aviation. On Dec. 28 the presidents of the west coast aircraft companies honored J. H. "Dutch" Kindelberger, president of North American Aviation, Inc., on his 25th year in the aviation industry. Mustered out of the Army as a young lieutenant in 1919, Kindelberger went to work for Glenn L. Martin in Cleveland. This was the start of a great career of building airplanes. What a climax to the first quarter of a century to have his airplanes flying in virtually every theatre of war over the globe! The nation owes much to this able airplane producer.

With its January issue *U. S. Air Services*, edited and published by Earl N. Findley, celebrates its 25th anniversary. As the pioneer aviation news organization for the industry, we are proud to salute our able and older contemporary. We also salute the loyal advertisers who have made possible this useful publication through the many lean years that marked most of the quarter of a century of publishing. Earl Findley was the *New York Tribune's* first aviation reporter and editor. He has reported aviation from its earliest days. He has devoted his life unselfishly and modestly to the cause and crusade of aviation. In this day of "Johnny-come-latelys" capitalizing on aviation's huge war-time growth, we are proud to salute the dean of aviation publishing for his quarter-century of intellectual honesty and service. The understanding and the warm personal touch of the pioneer and the veteran are needed in these days of temporary lush pocketbooks.

The third 25th milestone was reached by the dean of all pilots in the world—Capt. E. Hamilton Lee of United Air Lines. To have flown 3,500,000 miles in a quarter of a century, with only three bosses, is a distinguished and unequaled aviation record. It would be interesting to calculate the amount of time Ham Lee has spent off the earth—certainly an all-time high for mere mortals. To calm and capable Ham Lee goes our best wishes for more and higher records.

WAYNE W. PARRISH

Books

(Continued from page 12)

begun. The beginnings in August, 1942 were pathetically small despite the misleading and over-exuberant newspaper headlines that led one to believe that the U. S. was launching something terrific against Germany. Even at the close of one year, U. S. bomber strength in England was small although the record of achievement was highly creditable. There are some excellent aviation books coming on the market, of which we have strongly recommended a few. This is one which ranks at the top, for it is a stirring review of the first air chapter of World War II.

—W. W. P.

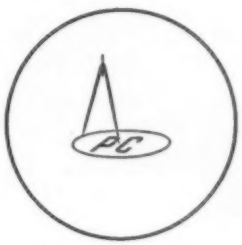
FOUR MILES SOUTH OF KITTY HAWK. *(Limited Edition.) Published by the Warren McArthur Corporation, 1 Park Avenue, N. Y.*

This is the second annual edition of this brightly written and compiled "spotlight history" of aviation. It is a volume all pioneers of aviation will prize. The errors of the 1942 edition have been eliminated and some new material has been added. It's clever throughout and handsomely printed. A grand contribution to the 40th anniversary of flight.

W. W. P.

A piston ring is a relatively small part of an aircraft engine.

But no manufacturer of aircraft engines regards it as small in importance!



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THE MAIN LINE AIRWAY

Vol. 7 No. 16
Jan. 15, 1944

American Aviation

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This Issue

AAF 'Our Greatest Strength'—Gen. Arnold

Near Future to Determine Luftwaffe's Fate, Report Says; AAF Has 2,385,000 Men

By ERIC BRAMLEY

THE Army Air Forces, which at the time of the Pearl Harbor attack was equipped with "plans but not with planes," has turned out to be "our greatest strength," has so far supplied "our margin of victory," and is now in the process of fulfilling "an historic and decisive mission," Gen. H. H. Arnold, AAF Commanding General, stated Jan. 4 in a report to the Secretary of War.

The 54-page report was one of the most comprehensive and clearly-written documents compiled to date on the AAF, covering its development from an organization with a pitifully small number of planes and personnel to the world's strongest air fighting force.

"It is difficult to appraise the present struggle for air supremacy as representing anything short of a major turning point in the war," Gen. Arnold asserted. "What American and Royal Air Force bombers can do to the whole German war machine, once the German fighter force is rendered impotent, needs no comment. The issue hangs now on which side first falters, weakens, and loses its punishing power . . . we will not falter."

Discussing the European theater, he stated that "in view of the high rate of attrition of German fighter aircraft on the western front, the near future appears likely to be a crucial period which may determine the survival or destruction of the Luftwaffe as an effective air force. If the present rate of attrition keeps up, the German aircraft factories producing these fighters continue to suffer progressive destruction, a point will be reached where German reserves are exhausted and only a trickle of new replacements can be supplied."

The AAF's primary concern, he explained, is to make the coming invasion of Germany "as economical as possible by drastically reducing the war potential of the Third Reich and its satellites." To destroy the will to fight is one of the secondary objectives—"we do not expect white crosses to appear tomorrow on the runways at Templehof" (as appeared on the island of Pantelleria, when the garrison surrendered to airpower).

On Dec. 7, 1941, Gen. Arnold said, U. S. combat air strength was "little better than a corporal's guard of some 3,000 planes; of these only 1,157 were actually suited to combat service. We had 159 four-engined bombers. . . .

"The Army Air Forces which the Axis calculated would be the weak link in our chain of battle, has instead turned out to be our greatest strength and has so far supplied our margin of victory. The war has not yet been won, but certainly our offensives on all fronts have averted its loss. . . .

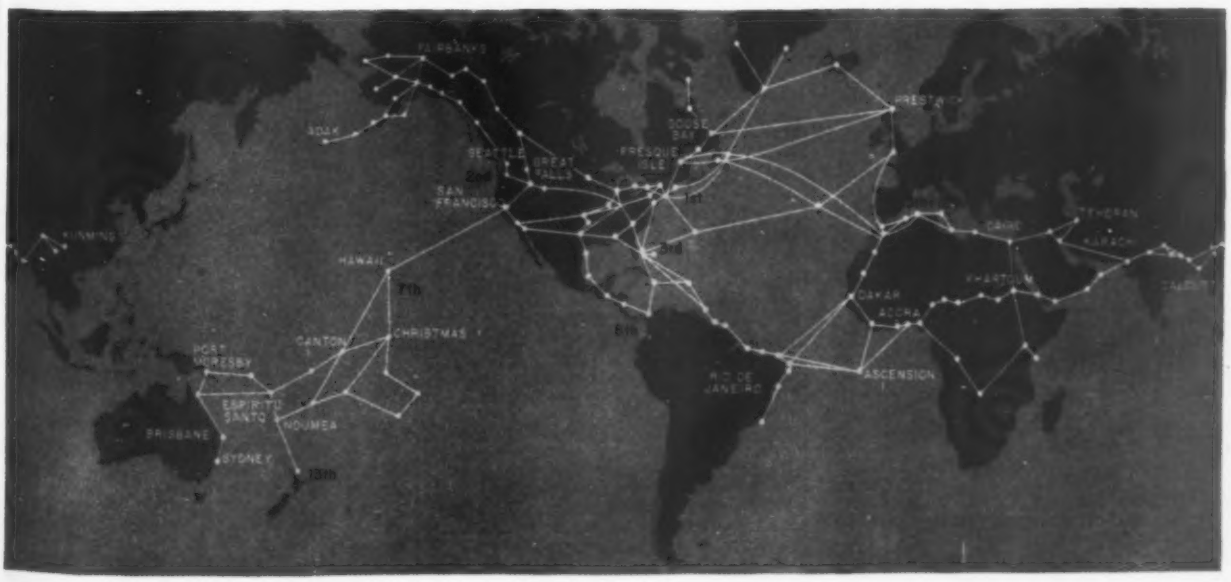
"We have proved that our pre-war plane designs and pre-war concepts of air strategy and tactics were sound. From the wreckage of a score of airfields scattered in the Pacific area arose an air force of 2,385,000 officers and enlisted men—a number still growing. As of Oct. 31, 1943 those men have already flown over a quarter of a million combat sorties, expended in combat more than 40 million rounds of ammunition, used up nearly two billion gallons of gasoline, destroyed in aerial combat 8,478 enemy planes, probably destroyed 2,555 more and damaged another 2,834. These figures do not include enemy planes destroyed on the

(Turn to page 21)

The Cost of Progress

To design and build just one eight-foot wheel on the experimental B-19 heavy bomber cost $40,000, AAF Commanding General H. H. Arnold said in his report to the Secretary of War. "It can now be stated," he continued, "that a total of $852,000 was spent in developing the P-38 fighter, or $113 per pound."

U. S. Air Forces—Locations and Air Transport Command Routes



Shippers Organizing for Air Rights Fight

New Association, Comparable to Air Policy Committee, to Seek Public Support

By KATHERINE E. JOHNSEN

UNITED STATES shipping interests will formally organize as an association in the very near future to tackle pastwar problems with a united front, it has been reported to *American Aviation.*

Air services to complement shipping services will figure prominently in the postwar planning of shippers. Now blocked by legislative prohibitions against joint control of air and ship lines, shippers are making a concerted drive to obtain "rights" to use aircraft in conjunction with their shipping services.

The new association which will have headquarters in New York City, it is said, will be similar in many respects to the Air Policy Committee, representing the 16 domestic airlines, in the aviation field. The association will aim at getting shipping viewpoints across to the public and develop public support for a strong merchant marine for the postwar, it is understood. Shippers estimate that 70% of the United States' foreign commerce was carried by foreign flag vessels in the prewar era, and have expressed a determination to have U. S. flag ships carry at least 50% of our foreign trade after the war.

Almon E. Roth, now an industry member of the National War Labor Board, will head the new shipping association, *American Aviation* was told. Roth previously had been comptroller of Stanford University and head of the West Coast Employer's Association. As a member of WLB, Roth succeeded Roger D. Lapham, now mayor of San Francisco.

Look to Postwar Era

The fundamental purpose of the association, as reported to *American Aviation,* will be to lay groundwork for the emergence of a strong shipping industry in the postwar, but not to duplicate or supplant the work of the American Merchant Marine Institute, or other existing and permanent shipping organizations. It is expected that the new organization will unite shipping interests in their drive to obtain air rights. U. S. shippers are now confronted, on the one hand, with competition in the postwar from foreign lines expected to operate aircraft in conjunction with their sea routes, and, on the other hand, with the provisions of the Civil Aeronautics Act of 1938 which have been interpreted by the Civil Aeronautics Board to outlaw joint control of U. S. ship and airlines.

Shipping interests contend that in order to meet foreign competition, it will be necessary for them to have the same privileges to operate airlines as their foreign competitors. They maintain that the prohibition against shippers operating aircraft was not intended by Congress, and their confidence that the prohibition will be removed is indicated by the extensive postwar aviation planning now underway by shipping concerns. Spokesmen for shippers cite the Merchant Marine Act of 1936 as "specifically directing the Maritime Commission to study and cooperate with shipowners in the use of transoceanic aircraft service in connection with or in lieu of surface vessels."

It is generally understood that Congressional supporters of the shipping viewpoint will advocate an amendment to the pending Lea bill which will allow shippers to operate air routes over their present sea routes.

Another main argument being advanced by shippers is that air transportation is simply a "next step" in the evolution of transportation and that it is the duty of "shippers" to keep pace with new developments in "shipping" media. In this regard, they claim that it would be as logical to rule that companies which originally started sailing boat operations should not have been permitted to inaugurate steamship services over their routes, as to rule that companies now operating steamships must not inaugurate air services over their routes.

Endorse Competition

Shipping interests maintain that their position is an endorsement of the U. S. policy of "competition", and not a proposal to eliminate competition. They point out that the overseas transportation field should not be confused with the domestic field, in which joint transportation controls would eliminate competition. U. S. shippers will be pitted, their spokesmen explain, against foreign competition.

U. S. shippers are in 100% agreement with the stand of the 16 domestic airlines, that foreign air operations should not be limited to a "chosen instrument". They urge that all carriers have the "right" to compete at the Civil Aeronautics Board for air routes.

The shippers' position has received endorsement from influential quarters, including: Rear Admiral Emory S. Land, Chairman, Maritime Commission; Rep. Schuyler Otis Bland, Chairman, House Committee on Merchant Marine and Fisheries; U. S. Chamber of Commerce.

Opposition to the shipping viewpoint has been expressed on the Senate floor by Sen. Bennett Champ Clark (D., Mo.), chairman of the aviation subcommittee of Senate Commerce Committee.

The fact that shipping firms may be forced to sustain their prewar sea routes solely with air operations in the years immediately after the war was pointed out to *American Aviation* by William D. Jackson, vice president and general counsel of United Fruit Co., chairman of the Transportation Committee of the U. S. Chamber of Commerce, and unofficial voice of shippers, which to date have only informally organized to cope with postwar problems. Jackson is brother-in-law to the late "Billy" Mitchell, Army aviation pioneer.

Jackson explained that the Government has commandeered all ships for war work and that these ships will be kept in the Government service until all troops have been transported from overseas. The estimate given shippers, he said, is that ships will not be returned to private companies until at least two years after the war.

"Even after ships are returned, it may take months to recondition them for passenger service, because of the very substantial changes and alterations made in converting them to troop carriers", Jackson remarked. Transport aircraft, on the other hand, will be available in large quantities almost the moment the war ends, he added.

In the interim between the end of the war and the return of ships to private shipping, Jackson continued, "it appears that the domestic air carriers and the foreign air carriers, perhaps owned by foreign steamship lines, are to be permitted to step in and take over the passenger business heretofore handled by steamship companies . . . The steamship companies do not ask for any advantage over air carriers, but they do ask for an open door policy of equal opportunity for all, so that they may be allowed to prove that they can furnish an integrated air and surface overseas transportation service which would be in the public interest."

Cites Huge Investment

Shipping concerns "have spent many millions of dollars in developing the business of transporting cargo and passengers to and from foreign lands," Jackson continued. "Why should air companies without any investment in foreign fields, and often without any knowledge of trade or conditions in such countries, be given preference in applying for the right to establish air service, to the entire exclusion of steamship companies with large capital investments and extensive knowledge and personnel? This exclusion will further hamper the American merchant marine and may even destroy its ability to continue to maintain some essential steamship services. It may result in greater subsidy costs to the U. S. Government, and certainly will serve no public purpose."

Jackson especially called attention to the fact that shipping concerns which have already established their capital overseas investments are in a position to perform air operations for the American people at less taxpayers' expense than air carriers. He emphasized, however, that shippers had every intention of making their already-established overseas services and facilities (he mentioned meteorological services as an example) available to U. S. air carriers.

Aviation Calendar

Jan. 24-25—Nine-state airport planning conference, Kansas City, auspices of Kansas City Chamber of Commerce.

Jan. 25-27—Twelfth Annual Meeting, Institute of the Aeronautical Sciences, Columbia University, New York City.

Feb. 18-19—Middlewest airport managers conference, Hotel Anthony, Fort Wayne, Ind.

April—Engine and Accessory Production Meeting, Institute of the Aeronautical Sciences, Detroit. Date not yet set.

Jet Propulsion Fighter Plane Revealed in Official Release

Craft for Training Ordered by U. S., British; Several Hundred Flights Made

OFFICIALLY disclosing one of the most revolutionary advances in aeronautical engineering, existence of a new fighter plane powered by jet propulsion engines which eliminate propellers and make possible extreme speed at high altitudes was revealed on Jan. 7 in a joint statement issued by the Army Air Forces and the Royal Air Force.

Subsequently British dispatches said the plane had been seen in flight by so many people in England it was no longer considered a secret.

The announcement contributed little detail to the facts generally known in the aviation industry regarding manufacture of the jet-propulsion plane by the Bell Aircraft Corp. and the motor by General Electric Co., but did open up the subject to discussion.

It revealed that several hundred successful flights have been made by American pilots in the U. S. and by British pilots with the British aircraft, many at high altitudes and "extreme speed," and all without a single mishap. Speed of the plane was placed at between 500 and 600 mph.

Gen. H. H. Arnold and the British ministries for air and aircraft production, it was announced, have ordered the production of "a sufficient quantity" for training purposes in the U. S. and Great Britain.

Credit for development of the jet propulsion engine was given to an Englishman, Group Capt. Frank Whittle, who had started work on it in 1933. His preliminary engine ran successfully in 1937. In 1939 the British Air Ministry placed an order for aircraft using the engines with Gloucester Aircraft Co., Ltd., of Gloucester, England, and Group Capt. Whittle was lent to a special factory, Power Jets, Ltd., to build the engines. First flight was made in May, 1941, by the late Flight Lieut. P. G. Sayers, chief test pilot of Gloucester Aircraft.

The British then gave full information on the new engine and aircraft to the AAF, and the original engine was sent to General Electric Co. here. Thereafter the AAF, RAF, the AAF Materiel Command and the British Ministry of Aircraft Production worked together to produce experimental models. General Electric built several of the engines, having the first ready for a test within six months. At the same time, Bell Aircraft Co. was given an order to build a plane suitable to operate with two of the engines.

The maiden flight of the first experimental model in the U. S. was made on Oct. 1, 1942, with Robert M. Stanley, chief test pilot of the Bell Co., at the controls. The next day Col. Laurence C. Craigie, since promoted to brigadier general, became the first Army officer to fly the new type.

Technical details of the jet propulsion engine are still restricted, but it was disclosed that instead of 100 octane gasoline it uses kerosene as a basis of its fuel. The plane operates efficiently at extreme altitudes.

Lawrence D. Bell, in a statement following the AAF announcement, said, "Jet propulsion, which has now passed both the experimental tests of the AAF and the RAF, proves a new scientific principle—that planes can now fly without propellers. Once a principle is proved, count on engineering genius of the Allied powers to develop it into greater performance records.

Varied reactions in aviation circles followed release of the information.

An official high in military aviation declared that the new fighter plane was a "priceless asset" for the Navy's carrier-based aerial operations and a "tremendous weapon in the coming battle of Japan." He said the enormous power created by jet propulsion presented three basic advantages that could contribute greatly toward the development of new carrier-based aircraft for the Navy. These, he said, were better and smoother take-offs, the use of a smaller take-off area and a lifting power two or three times that of conventional planes, thereby permitting greater bomb loads. One feature which has spurred research, he added, is the relatively noiseless operation.

Capt. Eddie Rickenbacker expressed the opinion the war would be over before it is fully developed as a weapon but predicted that it would change the whole course of civilization with respect to transportation and travel. "It has brought us 50 years farther than we would have been had the war not occurred," he said.

Orville Wright, in an interview, suggested that widespread use of the jet motor is still "an awful long way off" and added, "it's greatest advantage is in the fact that it produces a great amount of power for a few seconds." He said it would never compete with the conventional motor type and that instead of different types of motors modern airplanes could be cleaned up aerodynamically, eliminating resistance.

Major Oliver Stewart, British airman, in a radio interview reported by British Information Service, stating that the new motor uses kerosene, declared the only disadvantage of the new plane is its extremely high fuel consumption.

Other authorities asserted there was no reason why the jet propulsion engine could not be used on bombers or other types of planes as well as the fighter.

Pogue, Warner Reappointed to CAB Posts

American Aviation Photo

Edward P. Warner, left, has been reappointed vice chairman, and L. Welch Pogue, right, has been renamed chairman of the Civil Aeronautics Board for 1944. Both men served in these capacities during 1943 and were reappointed by President Roosevelt. Their terms as chairman and vice chairman expire Dec. 31, 1944.

Imports by Air Total 41,000,000 Pounds

Global Air Shipment of Strategic Materials Basis for Analysis and Cargo Planning

By LIEUTENANT (JG) LANGDON P. MARVIN, JR., USNR

Chairman, Interdepartmental Air Cargo Priorities Committee, War Production Board

A LOT of the discussion of the importance of air cargo has suffered, I feel, from one of two extremes—either an overly-futuristic point of view which neglects some thorny facts of the present or a backward view glued to the facts of a too-distant past. Maybe this is because facts on movements of cargo by air are curiously incomplete.

If you want to know how much and what was imported and exported by ocean vessel in the past, you can go back as far as 1790 in the files of the Commerce and State Departments. But with imports and exports by air—complete records were only started in 1943, long after planes had begun to haul freight in volume.

However, the records on imports by air in 1943 may be a small contribution towards a sound basis for analysis and planning of air cargo.

Here they are: The relevant facts and figures on movement of imported materials by air compared with imports by ocean vessels from non-contiguous territories and foreign countries:

Calendar Year 1943 [1]

I. VOLUME

By ocean vessel: 25,150,000 long tons;

By airplane: 41,000,000 lbs. or .072% of total volume by ocean ship (1.67 lbs. by air for each long ton by ship).

II. VALUE

By ocean vessel: $1.991.897,000;

By airplane: $116,209,000 or 5.83% of total value of ocean cargo.

III. AVERAGE UNIT VALUE

By ocean vessel: $0.035 per pound;

By airplane: $2.85 per pound or 81 times the average unit value of ship cargo.

IV. SAFETY (a very variable comparison)

Approximately 20 times as safe by air as by sea.

V. SPEED (also a variable comparison)

Approximately six times as fast as ship cargo—port to port.

[1] The figures for 1943 are not yet complete. Therefore, I have projected figures for the major part of the year for the whole year. Remember, too, that these figures include only cargo by air, *exclude* passengers and mail. The figures on air cargo include imports into U.S.A. by Army, Navy, commercial or foreign planes (as compiled from customs entries by Commerce), and shipments of strategic raw materials from China to India on planes owned or under contract to U.S.A., as reported by State Department and F.E.A. representatives.

To roll all the figures on imports into one sentence, we might say that during 1943, a unit of air cargo was 1,381 times smaller, 81 times as valuable, about 20 times as safe, and moved about six times as fast as cargo on ocean vessels.

Last spring I made a "guesstimate" that imported air cargo would run pound for ton compared with ship cargo. I was conservative—counting in the shipments from China to India closer to two pounds of cargo have moved by air for each long ton by ship.

Of what importance are these imports by air?

In terms of tonnage they are very small.

In terms of total dollar value they are small, too.

Their real importance lies in the nature of the materials themselves and the timing of their arrival. Obviously it would be no contribution to the war effort to fly 20,000 tons of non-essential imports like bananas, coffee, or sugar—or even 20,000 tons of manganese, copper, and bauxite, essential materials but needed in many thousands of tons. As for dollar value, it is relatively unimportant in time of war; recently we turned down an application for priority to import by air a small amount of material worth $1,500 a pound, and we are now giving top priority to large amounts of a strategic raw material worth less than 5c a pound. Incidentally, the Army and Navy Air Transport Services are especially important in handling these highly strategic imports of low dollar value—which could not possibly afford a regular commercial air freight rate.

Naturally, priorities are given only to the cream of our imports, to materials of relatively light tonnage which are urgently needed for war production, for example:

Mica: For insulation in radios and aircraft magnetos.

Quartz Crystals: For radio oscillators.

Tantalite: For electronics and other purposes.

Columbite: For stainless steel.

Beryllium: For aircraft engines and essential copper alloys.

Industrial Diamonds: For special dies and cutting tools.

Rare drugs, and other materials for war purposes.

On these, and on other raw materials which I have not mentioned for reasons of security, depend production schedules of war equipment worth billions of dollars and many thousands of lives.

Without the amazing performance of the Army Air Transport Command and Naval Air Transport Service in flying strategic raw materials, the production of some of our most vital war equipment would have lagged dangerously behind its present level.

Chinese workmen are shown loading tin into an American transport plane—illustrating the far-flung activity of air transport in bringing strategic materials to the U. S.

Priorities System

Air transportation has been thought of almost exclusively in connection with delivering military supplies and personnel to combat theaters, and this is rightly its primary function. But the vast war production machine which has been built up in the U. S. A. requires huge supplies of raw materials, including many rare minerals which are seldom heard of by the public and the peace-time consumption of which is almost negligible. Therefore, while imports of strategic raw materials plays second fiddle to exports of military supplies and personnel, they are nevertheless an important function of the Army Air Transport Command, Naval Air

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The Author

The author, Lt. (jg) L. P. Marvin, Jr., USNR, was assigned overseas in the spring and summer of 1943 on the problems of movement of strategic raw materials by air. His missions took him to Brazil, Africa, the Middle East, India, China, and the North Atlantic air bases. In addition he has spent some time visiting air freight depots in this country. Currently he is Chairman of the Interdepartmental Air Cargo Priorities Committee in Washington, a position to which he has been assigned since September, 1942. He was graduated from Harvard College in 1941. He formerly was executive secretary of the Interdepartmental Shipping Priorities Committee of the War Production Board.

AAF 'Our Greatest Strength'—Arnold

(Continued from page 17)

ground nor the extraordinary score run up by the American Volunteer Group in China."

Gen. Arnold praised the aircraft production effort, reviewing statistics on recent monthly records, and stated that "production . . . measured on a weight basis has increased more rapidly during the past half year than during 1942."

He revealed that up to Oct. 1, 1943, a total of 26,900 planes had been exported to our allies by lend-lease or direct purchase.

"One hundred and forty-five thousand planes are scheduled for completion by the War Production Board in the next 15 months," he said. "They will be heavier and more elaborately equipped. The average airframe weight of airplanes being produced now is twice as great as it was a year ago. The weight of heavy bombers to be produced in the next 18 months is scheduled to exceed that of all types of planes produced in our first year and a half of war. There must be no lag in production.

"Not one of our Air Forces has the planes it should have. Every one could use double the number is now possesses . . . The biggest battles in the air and on land are yet to be fought. We will need every plane we can produce." He reiterated his recent statement that the B-29 "will see action in 1944."

Other points made by General Arnold included:

• Civilian flying schools, despite the fact that the AAF could give them no assurance of contracts, went ahead in the early part of the war with an expansion program to train large numbers of Army airmen. "We could not possibly have trained so many airmen so quickly without these schools."

• During the pre-Pearl Harbor period, the AAF was especially indebted to Gen. George C. Marshall, U. S. Army Chief of Staff, for his "profound grasp of airpower and for his executive skill in working out an expanding air program despite obstacles."

• Requirements are now focused on the matter of longer fighting range, to protect our bombers from enemy interceptors over Germany. "And those persons who think that after the costly and time-consuming defeat of Germany, we can by a simple order fly our planes to China, bomb Tokyo, and bring Japan to her knees, do not yet understand the need for vast supply lines, well-equipped bases, and planes built to fight under entirely different conditions from those that prevail in Europe. No two theaters of war have been the same, and they probably never will be."

• Germany required 10 years to create her Luftwaffe; "we were required to build our air force in one, and to fight with it in four corners of the world at the same time . . . It was necessary for us to parcel out our airplanes among the many who urgently needed them in much the same manner that water from the last canteen is distributed among a party lost in the desert."

• As the war continues, emphasis will naturally shift from the training of vast numbers of new men to training of replacements and to increasing the technical knowledge of the men already in service. "When that time comes the U. S. will have an Air Force with a striking power unequaled in history."

• From Feb. 2, 1942 to Oct. 31, 1943, enemy planes were shot down in aerial combat at a rate of never less than two planes for one in any theater of war, and at an overall rate of four to one.

• "Basically, the accident rate is good. Ninety-five out of each 100 Army Air Force pilots in training can be expected to fly through the next 12 months without a scratch."

• The Air Transport Command now totals over 85,000 officers and men and it now operates over some 110,000 miles of routes. In recent months an average of more than twelve million miles a month have been flown in ferrying operations and more than ten million in air transport. "It will be realized that air transportation itself does not solve the whole problem of supply, but the ability to fly in vital cargo on short notice can turn and has turned the tide of battle."

• In connection with ATC, the contract system under which the airlines operate for the Army "is worthy of special mention. While taking care of our domestic air transportation requirements, we look out in so far as possible for the American public's air travel needs. Of course, neither civilians—nor the fighting forces—obtain all the service they wish they could obtain. Four thousand additional transport planes could be used today if we had them."

Gen. Arnold did not mention a separate air force in his report. He pointed to the Tunisian campaign, however, as another "lucid demonstration of the soundness of having an airman run the air war while a soldier runs the ground war—but always working together."

In a discussion of the Pacific, he pointed out that Japan is in a strong position and that "no traditional mode of naval or land warfare could possibly have broken the defensive ring that Japan counted on for consolidation. In point of fact, that ring is still largely intact. Japan had the drop on us . . ."

Asserting that "offense is the essence of airpower," he stated that the Coral Sea and Midway actions "helped dramatically to confirm the long standing conviction of this country's air leaders—airpower, properly deployed and employed, can stop a sea-borne force."

Potentially, Gen. Arnold said, "China

(Turn to next page)

A Short Life

The life of a B-17 Flying Fortress is short, as is the working life of any airplane in war, Gen. H. H. Arnold, Army Air Forces Commanding General, said in his recent report to the Secretary of War. "I can now reveal that in one of our theaters, the typical Flying Fortress is at present in operation 231 days before it is lost in combat or damaged mechanically in routine flights so that it is torn down and used to rebuild other B-17s, and the crew assigned to another plane," he said. "During this average life period, in addition to the numerous practice, training, test, supply, administration and ferry flights, the average B-17 will fly 21 combat missions in this particular theater. This is true today—but may not be true tomorrow, for war changes constantly. In some other theaters, the typical B-17 functions several times as long as this before it is replaced."

International News Photo

Twenty six-engined German ME-323 transports were knocked down by the Air Forces on Apr. 22, 1942, Gen. Arnold revealed in his report. "Those ME-323s were carrying the equivalent of a German regiment into Tunisia," he said. The ME-323 shown above is being utilized as a flying ambulance. The plane can carry 130 fully armed troops, cannon, trucks or a tank to the weight of six tons, it is said.

Aircraft Industry Expansion

Gen. Arnold's report to the Secretary of War contained the following charts showing the expansion of the aircraft manufacturing industry. Only final assembly plants are listed. Thousands of other plants which produce parts and sub-assemblies are not included.

I. Number of U. S. Aircraft Assembly Plants in Operation *
(Military Production Only)

Year	Engines	Propellers	Airframes
1938	4	2	9
1939	7	4	17
1940	12	4	25
1941	16	9	38
1942	22	13	51
1943	22	19	67

* Includes Canadian plants engaged in U. S. financed activities.

II. Number of Employes in U. S. Aircraft Assembly Plants*
(At Mid-year. Final Assembly Plants Only)

Year	Engine Plants	Propeller Plants	Airframe Plants
1938	7,000	1,000	24,000
1939	8,000	1,500	28,000
1940	25,000	4,000	86,000
1941	59,000	10,000	199,000
1942	157,000	25,000	471,000
1943	271,000	48,000	864,000
Est. for Dec. 1943	361,000	56,000	1,022,000

*Excludes employes in Canadian plants engaged in U. S. financed activities.

(Continued from preceding page)

remains our most effective base for aerial operations against Japan." He pointed out, however, that there are tremendous supply problems involved. A C-87, for example, can deliver four tons of 100-octane gasoline over the "hump" from Assam to Kunming, but to do so the airplane must consume three and one-half tons of gasoline.

"It need hardly be stated that we have no intention of allowing our air operations from the Asiatic mainland to remain on the level of guerrilla warfare," he said. "Neither Japanese shipping nor Japanese industry will survive the bombing in store for them."

Turning again to the European theater, he explained that "our first step in the strategic bombing offensive is the destruction of the enemy's fighter strength . . . Fighter strength can be knocked out on the ground, in air combat or in the various stages before it rolls off the production line. We know that the nearer to the final assembly stage we attack enemy aircraft, the less time he will have to replenish his front line strength. Conversely, the farther away from the assembly stage his fighter aircraft industry is bombed, the more time he will have to take remedial steps.

"For quick results, we take out the assembly plants, but for some of the more lasting effects we concentrate on a system of targets deeper in the industry. The destruction of a plant making steel for airplanes is felt in a matter of weeks while the destruction of a coal mine does not affect the industry for months. The next objective of our bomber offensive is the smashing of industrial targets vital to the enemy's military strength on the ground . . .

"As we go deeper into Germany, we hurt her more and pay higher prices. In a sense, it is bombardment in depth against defense in depth. Inevitably, our campaign must be accompanied by production in depth on the home front."

Gen. Arnold asserted in his report that "it is now plain that for us the beginning has ended; for our enemies, the end has begun. After a period of desperate, if resourceful, maneuvering with consistently outnumbered forces, the United Nations have mounted and are about to mount greater crushing aerial offensives on every front. The Army Air Forces are now in the process of fulfilling an historic and decisive mission."

Burke Resigns from Department of State

Thomas Burke, chief of the Division of International Communications of the Department of State since August, 1938, resigned from Secretary of State Cordell Hull's staff during the week of Jan. 1.

Burke

It has been generally known in Washington that Burke has been planning to leave the State Dept. for some time. His resignation is with the full approval of Mr. Hull, with whose reciprocal trade agreements Burke was in full accord. Burke has accumulated leave in the State Dept. until Apr. 28, 1944 and has been granted leave of absence until that time. He is expected to make known his plans to return to private industry in the near future.

Burke and Assistant Secretary of State Adolf Berle, who has been handling aviation problems, have never agreed on policy. However, there is a question whether Burke's resignation is a victory for Berle, since Burke some time ago made it known that he would re-enter private business.

Burke has favored a single-company policy for U. S. international air transportation and was a dissenting member of the subcommittee of the interdepartmental committee created to study international air policy.

He was born in New York City 48 years ago and was educated at De La Salle Institute, New York University Law School and the Pulitzer School of Journalism at Columbia University. He also studied in Germany and Ireland.

After serving overseas as a captain with the Rainbow Division in World War I, he spent many years abroad as a representative of Standard Oil Co. In 1934, he joined the Bureau of Foreign and Domestic Commerce of the Dept. of Commerce, transferring to the State Dept. in 1938.

Burke was active in de-Germanizing the airlines in Latin America, and also played an important diplomatic role in securing facilities abroad for Air Transport Command operations.

9 Tons Per Man

For every pilot overseas, the Air Service Command sends out the surprising average of nine tons of aviation supplies monthly, not including food and other items handled by the Quartermaster, AAF Commanding General H. H. Arnold said in his report. ASC's 300 warehouses contain 500,000 different items—five times as many as are listed in the Sears Roebuck catalog, he said. "Every one of them is needed for the 150 aircraft types of the Army Air Forces. The storage space in the U. S. alone is equivalent to a building 75 feet wide and 100 miles long."

8,802 Plane Output In December

Aircraft production in December totaled 8,802 accepted planes or 95% of schedule. Although this barely surpassed November's peak of 8,789, WPB officials pointed to the record of heavy bomber production, the most critical aspect of the program, which was ahead of schedule and totaled more than 1,200.

Production by weight was 84,000,000 pounds, an increase of 3,500,000 pounds over November and a gain of 127% over January, 1943. There was, further, an increase of 71% in the weight of combat aircraft and of 80% in the weight of tactical aircraft. The average working day output during December was 339 finished planes.

Russia Gets 7,000 U. S. Planes

Russia had received 7,000 airplanes through lend-lease up to October 31—more than had been sent to any other nation, Leo T. Crowley, U. S. foreign economic administrator, revealed last fortnight. In the first 10 months of 1943 all lend-lease shipments to Russia were 63% higher than in 1942, Crowley said.

ATC Averaged 5 Hrs. 47 Min. Daily With 13 Airline Planes

Says Utilization Was 'Effective' Except in 2 Cases

By ERIC BRAMLEY

THIRTEEN airplanes leased or bought by the Army from the domestic airlines, and now returned to the airlines, were operated an average of five hours and 47 minutes daily while in Air Transport Command service, according to figures obtained by *American Aviation.*

Included in the 13 airplanes were 10 DC-3s, two Lockheed Lodestars and one Stinson.

The Air Transport Command commented that the record of the 13 aircraft showed "effective utilization of all planes enumerated with the exception of two Lockheed planes originally owned by Mid-Continent Airlines . . . These two planes were C-56C type planes provided with Pratt & Whitney Hornet SIE3G engines (commercial designation), a non-standard power plant with the Army Air Forces.

"Maintenance difficulties with these particular aircraft were insurmountable due to unavailability of necessary spare parts, and it was necessary to either Class 26 these aircraft or to return them to the original owner. The latter course was followed in June, 1943." ("Class 26" is an Army designation meaning that the aircraft is no longer considered flyable or operable as Army equipment—Ed. Note.)

The record showed that one of the MCA Lockheeds was in ATC service for 377 days, during which time it was operated 85 hours, or an average of 13½ minutes daily. The other Lockheed was flown 209 hours in 377 days, or 33 minutes daily.

One DC-3, originally belonging to Delta Air Corp., was flown only 2.42 hours daily while in ATC service, while a Northwest ship flew only 3.72 hours daily.

On the other side of the ledger, however, utilization of one DC-3 averaged 9.62 hours daily, while others averaged 8.83, 9.20, 9.21, 7.39, 7.23, 6.31 and 4.02.

In September, 1943, the airlines averaged 10 hours and 21 minutes daily (revenue time) with their multi-engined equipment. Utilization of several of the ATC ships compared favorably with this average. Eliminating the Lockheeds and the Stinson, figures show an ATC average of 6 hours and 54 minutes daily with 10 DC-3s.

Dr. Bush Wins Edison Medal

Dr. Vannevar Bush, president of the Carnegie Institution of Washington, and director of the Office of Scientific Research and Development of the Office of Emergency Management, has been awarded the 1943 Edison Medal of the American Institute of Electrical Engineers.

Air Transport Command Cargo Aircraft Released for Scheduled Air Carrier Operation

(As of December 1, 1943)

NC Number	Make and Model	Date Mfg.	No. of Days in ATC Service	Total Flight Time in ATC Service Hrs: Min.	Date Released to Operator
All American					
2285	Stinson SR-10C	4-38	364	1212:42	7-15-43
American					
21767	Douglas DC-3	8-39	442	3903:59	7-23-43
25671	Douglas DC-3	3-40	491	4519:10	8-15-43
25664	Douglas DC-3	3-40	497	4785:35	8-23-43
Delta					
28343	Douglas DC-3	12-40	398	964:36	7- 3-43
Mid-Continent					
34964	Lockheed 18-07	7-41	377	85:00	6-13-43
25601	Lockheed 18-07	3-40	377	209:00	6-13-43
Northwest					
25610	Douglas DC-3A	1-40	426	1585:25	7-26-43
PCA					
25696	Douglas DC-3	3-41	380	1528:20	7- 2-43
TWA					
17318	Douglas DC-3	6-37	382	3520:15	7-27-43
33623**	Douglas DC-3A	5-41	503	3722:00	9- 8-43
Western					
33644*	Douglas DC-3A	4-41	495	3124:01	8-22-43
33647*	Douglas DC-3A	4-41	300	2271-39	9-23-43

** Previous civil owner was Northeast Airlines.

* Previous civil owner was United Air Lines.

NOTE: All planes not marked by an asterisk were turned back to previous owners.

Officers of War Production Councils Take Their Posts For New 4-Month Period

L. C. Goad, right; Lawrence Bell, left; Clyde Vandeberg, manager of the East Coast Council, standing.

New officers of the National Aircraft War Production Council and the West and East Coast Councils assumed their posts last week for the ensuing four months in the rotating system followed by the Councils.

P. G. Johnson, president and general manager of Boeing Aircraft Co., became president of the National Council, succeeding Lawrence D. Bell, president and general manager of Bell Aircraft Corp. Johnson also assumed presidency of the West Coast AWPC, succeeding T. Claude Ryan, president of Ryan Aeronautical Co.

L. C. Goad, general manager of Eastern Aircraft Division of General Motors Corp., became president of the East Coast Council, succeeding Bell in that capacity. Goad also became vice president of the national council. Victor Emanuel, president of The Aviation Corp., was elected vice president of the East Coast Council.

ATC Carried 40 Tons of Christmas Mail

The Air Transport Command carried at least 80,000 lbs. of Christmas air mail during the period from Dec. 10 to 27, according to incomplete reports to the Post Office Dept.

The 80,000 lbs. were carried out of 38 stations. P. O. air mail officials emphasized that reports are still incomplete and that the final figure will probably be somewhat higher. They doubted that it will exceed 100,000 lbs.

Largest single shipment handled by the Army was 10,000 lbs. of mail from San Francisco to Chicago.

Christmas air mail volume was the largest in history, exceeding the best previous year by 15 to 20%. Handling of the large volume was in general "very satisfactory," P. O. officials said.

Curtiss Helldiver 'Ahead Of Anything in World', Says Navy

QUANTITY PRODUCTION of the new Curtiss-Wright Helldiver dive bomber, officially designated as SB2C and described by a Navy spokesman as "a step ahead of anything in existence in the world," can now be revealed with announcement that it has stood its first battle test in the Pacific.

Going further than previous planes in providing maximum striking power at long range, the Helldiver is fast enough to keep up with its fighter escorts, the Hellcat and Corsair. It completes the fast, hard-hitting carrier-based team now composed of the Hellcat fighter, Helldiver and Avenger torpedo bomber—all incorporating post-Pearl Harbor improvements revolving around the application of higher horsepower. Navy spokesmen see in this team the answer to their needs in the Pacific.

Actual specifications and performance data of the SB2C are still restricted, but details of its construction were shown to a large number of aviation writers and newspaper men at the Columbus, O., plant of Curtiss-Wright Corp. last month where three Helldivers were put through their paces in a special demonstration.

Production figures also are restricted, but in addition to Columbus, the Helldiver also is being turned out in quantity by Canadian Car & Foundry Co., Ltd., of Canada at Ft. Williams, and by Fairchild of Canada, Ltd., at Montreal. In addition, the Curtiss-Wright plant at St. Louis is continuing to produce the Curtiss A-25 Shrike version for the Army.

Among features of the new Helldiver are longer range and greater bomb carrying capacity than any other dive bomber. The bomb load is enclosed completely within the belly of the fuselage, leaving lines as aerodynamically clean as possible. Its folding wings are equipped with wing tip slats for lateral control, mechanically operated in connection with the landing gear. Split flaps give braking control in power dives. Along with strength of construction to withstand catapulting and landings with a carrier's arresting gear, the problems of takeoff power, slow stalling speed and lateral control at low speed have been solved. Despite these requirements, the plane was kept small enough to fit on the carrier elevators and can be landed on any carrier, including "baby flat tops."

It is powered by a Wright Cyclone engine with a Curtiss electric constant-speed, full-feathering propeller.

Capt. J. W. C. Brand, Inspector of Naval Aircraft at the Columbus plant, declared, "in this plane we have what the Navy has been striving for, for a good many years."

Modifications are incorporated into the Helldiver in a special service center before it leaves the plant, so that it is battle-ready when accepted by the Navy. Changes are worked into the production line system as rapidly as possible.

The Helldiver was designed by Raymond C. Blaylock, now chief engineer at the Columbus plant, who assisted in designing the Curtiss F8C, first Navy plane built specifically for dive bombing and carrier service. Approximately 300 people in the engineering department worked on the project for two and one-half years. Between July, 1942 and November, 1943 a total of 889 major changes were made in the Helldiver design. Among the improvements perfected was a flap mechanism through which the pilot can open or close the flaps on the new Helldiver three times faster than on earlier models, a tremendous advantage in combat flying.

While engineers were working out their problems, production men under J. P. Davey, general manager of the Columbus plant—the first unit of which was dedicated three days before Pearl Harbor,—were beginning to train unskilled workers in a non-industrial area to be bomber builders, and to work out a production line system which was finally completed in October, 1943.

Curtiss-Wright Helldiver

Public May Buy WTS Planes

AIRCRAFT used in CAA's War Training Service program soon will be offered for sale to the public, *American Aviation* has learned.

CAA's new surplus consists of planes owned by Defense Plant Corp. which have been leased to War Training Service for use in its flight training program. Sale of the planes "has been made possible by action of the War and Navy Departments in transferring about 1,500 commercial type airplanes and light training planes to the Civil Aeronautics Administration," explained R. McLean Stewart, executive director of training, CAA.

A second source of surplus planes is the reduction in quotas for certain training courses, such as flight instructor training. Still another reason for excess planes accruing is that the present availability of maintenance and repair parts has meant that in crosscountry centers fewer planes constitute a working minimum, which can be kept ready for duty.

Before any of the planes could be offered for sale, it was necessary to take two steps. The first was the revocation of WPB's General Limitation Order L-262, the order which forbids the sale, transfer or rental of lightplanes without specific authorization of the War Production Board. Although the revocation has not been issued, informed sources say it is in preparation.

The second step was taken during the fortnight, when the Office of Price Administration announced ceiling prices on used aircraft with single engines up to 500 horsepower, freezing prices at present levels. The action was taken at the request of CAA which has found that purchases by private buyers have abnormally inflated prices.

The increased numbers of airplanes available for WTS use has resulted in a reshuffling of the plane supply among the schools and training centers. By allocating planes of similar types to the same operational unit, problems of repair and handling are greatly simplified. More important still it permits the standardization of student training. Only after the benefits of standardization have been realized, are the less suitable types weeded out into a surplus category.

CAA has developed in detail a program for appraising its stock of planes. Incoming Army aircraft will be inspected and, if accepted, recommended for special assignment with other planes of its type. The Army planes are expected to augment and wherever possible, replace DPC planes, which will then be prepared for sale. Inspection, appraisal of usefulness and finally a detailed procedure for public listing and secret bids from all comers has been prescribed as the formula for sale of the older, less desirable aircraft.

Highest bidders, or first bidders, will, after payment by certified check payable to Defense Plant Corp., obtain title from DPC and take possession of the plane. While the planes will carry no warranty from DPC, they will have been inspected for conformity to the Civil Air Regulations' standard of airworthiness.

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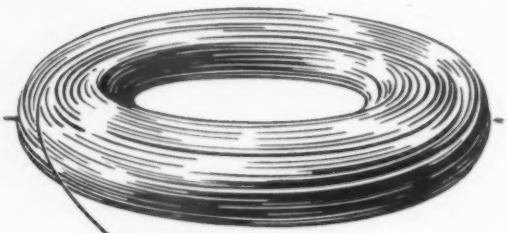
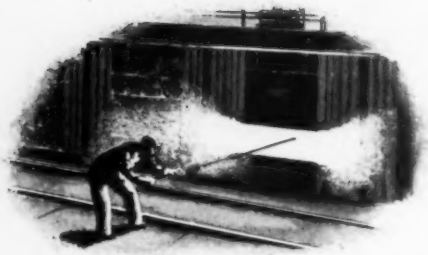
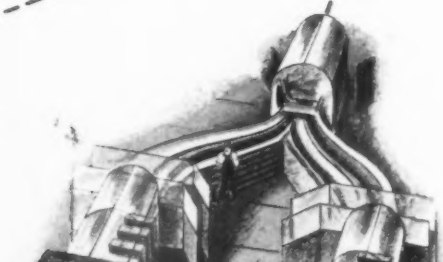


ROEBLING *Aircord*





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Helicopter Makes Dramatic Flight to Aid Survivors Of New York Explosion

A helicopter kept for experimental purposes at Floyd Bennett Field, New York, made a mercy flight from Manhattan's Battery to Sandy Hook following the recent destroyer explosion. The craft carrying two cases of blood plasma for survivors of the blast, made the jump in 14 minutes. It would have taken a boat an hour, and a car an hour and a half to make the delivery. This was the first time that a helicopter was used in such an emergency, said Navy and Coast Guard officials.

Selective Service Extends West Coast Plan on Deferments

The successful operation in West Coast aircraft plants of the joint certification system for deferment of key workers has caused Selective Service to extend its scope. The first action taken during the fortnight was to make it a requirement at all heavy bomber plants, regardless of their location.

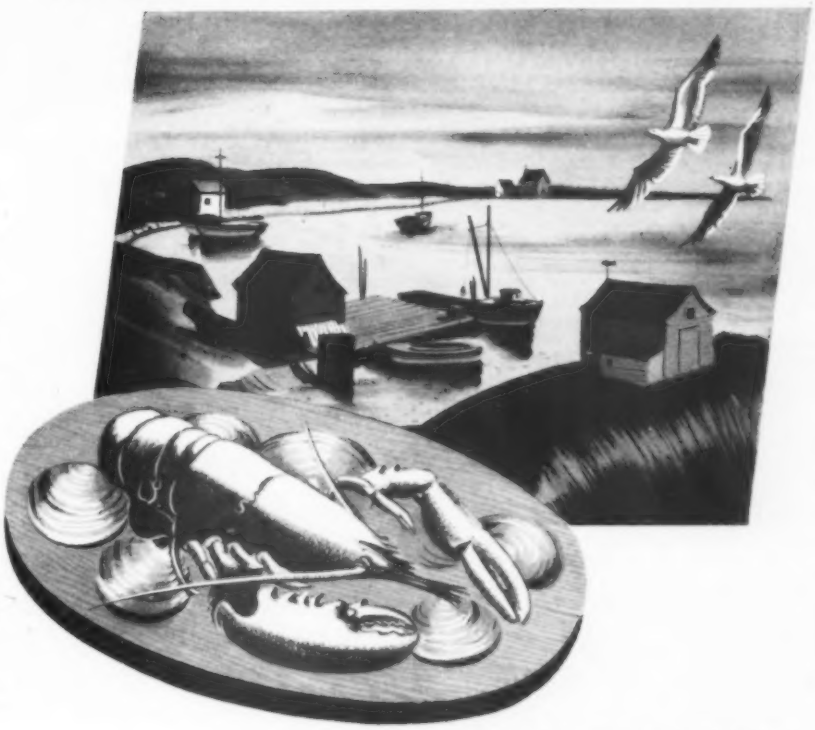
Selective Service later announced the new system was to be applied to about 15 airframe and parts plants outside the California-Oregon-Washington area. They added that this device, which doubly insures the deferment of key workers, would be extended wherever and whenever "production urgency requires." Manpower officials predicted East Coast aircraft plants and some shipbuilding companies would be next.

The joint certification system provides that the Army or Navy procurement officer at the plant certify that each individual placed, or about to be placed, on a replacement schedule is an essential worker, indispensable for the period, and that suitable replacement is being trained. Experience on the West Coast is reported to show that this method is persuasive with local draft boards who are usually willing to follow the recommendations of the jointly certified replacement schedule. Selective Service officials say they know of no case in which the local draft board has not concurred in the recommendation. "Both sides like it," they assert.

The certification by an Army, Navy or other Government agency representative is filed as a supplement to the Selective Service Request for Occupational Deferment (Form 42-A) in the case of an individual registrant and does not relieve the employer of the responsibility of filing a Form 42-A, when requesting deferment of an employe.

In the future, Selective Service announced, "Army, Navy or other Government agency representatives in industries and plants may be asked, where production urgency requires, to make joint certification with employers as to the necessity of workers in such plants for whom deferments are sought."

Tomorrow's air transportation ...



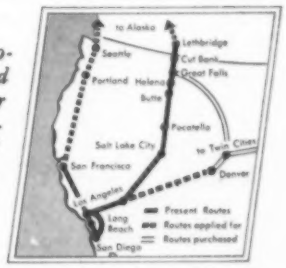
SHORE DINNER

fresh from the sea ... by air!

Lobsters from Labrador ... salmon steak from the Columbia River ... shrimp from Louisiana ... oysters from Chesapeake Bay! After the war, no matter where you live ... you'll enjoy them a-few-hours fresh ... instead of days.

The seafood industry long ago took to the air. But flying fish will become big business as air cargo rates come down. For example, air freighters, already designed, may bring air cargo rates as low as 10 cents per ton-mile ... which would mean a transportation cost of only 5 cents per pound to fly your fresh tuna steak 1000 miles!

WESTERN'S CARGO DIVISION is today flying military cargo planes ... and training flight crews ... for the Air Transport Command. Out of this war experience will come a lot of "know-how" for flying fish, fruit, machinery and merchandise for you after the war.



WESTERN AIR LINES

America's Pioneer Airline

General Traffic Offices: 510 West 6th Street, Los Angeles 14, California

Burden, Damon See Aviation In Major International Role

ADVOCATING A POLICY of "Freedom of Commercial Transit," which would give commercial aircraft the right to cross foreign countries and land for refueling or emergency purposes without obtaining special authority, William A. M. Burden, special aviation assistant to the Secretary of Commerce, suggested the possible creation of an international Civil Aeronautics commission with powers over rates and competitive practices in a prepared speech before the United Nations Forum Jan. 3.

Burden was the first speaker in a panel discussion on the subject, "The Future of International Air Transport," which was participated in by Ralph S. Damon, vice president and general manager of American Airlines, Inc. Senator Owen Brewster, (R., Me.) and Admiral E. S. Land, chairman of the U. S. Maritime Commission.

Most of the views of these leaders had been expressed publicly before. They were agreed entirely on one premise, that aviation will assume a place of tremendous importance in the domestic and international relationships of the future. On this point, the shade of difference was in degree only.

The most widely separated viewpoints were expressed by Damon and Brewster. The former championed the competitive, free enterprise philosophy and with reference to the airplane's place in the future peace of the world, he declared: "If we are to make a better world as a result of the cataclysm through which we are going, we must do the same thing on a worldwide basis and aviation, eliminating time and space is the medium which can do it . . . Each of the 17 airlines feels that it can do a better job under the stimulus of competition than can be done under the questionable blessing of single operation, whether it is called by the high-sounding Biblical phrase of chosen instrument' or the common garden variety term of 'monopoly.' I submit that American aviation today is as healthy, if not healthier, than that of any other nation."

Undoubtedly influenced by his experiences during a world girdling trip to American battle fronts, Senator Brewster argued that control of the air, at least in the immediate postwar period, be kept in the hands of the four great powers—U. S., Great Britain, Russia and China.

"Let America here take the lead in a policy designed simply and solely to enable those nations which are sacrificing so greatly to win the war to join in thus holding before the world the hope of a century of peace," Brewster said. The Senator, arguing against free air competition among all nations, reminded his audience that the German Lufthansa spawned the Luftwaffe, "All other nations will welcome adequate air service such as chosen instruments (whether they be 1 or 16) which these four powers can easily provide," he declared.

In a well documented review of the history of international air transport dating from World War I, Burden pointed out that the development of this phase of transportation up until the outbreak of World War II was incredibly restrictive. In arguing for relatively free use of the air space of the world, Burden minimized the military potentialities in domestic airlines, pointing out that Germany had less than 400 planes in its domestic and foreign service when World War II began. No country, Burden said, had more to lose from international restrictions than Great Britain.

Asserting ships of the sky were his second love, Admiral Land said certain aviation enthusiasts who believed airplanes would do away with ships were suffering delusions of grandeur. He argued for the steamship company's right for a place in air transportation, claiming airlines could be operated on a supplementary and complimentary basis.

Land predicted that the day of the luxury liner is past but unlike some aviation authorities who feel it may be necessary to scrap some planes after the War is over in the interests of new production, Land asserted the U. S. would keep its war time ships and not repeat the mistakes of World War I when many were scrapped.

In the discussion which followed, Damon and Brewster crossed swords over transoceanic travel costs in the postwar era. Brewster had quoted the president of a great airline (obviously Juan Trippe of Pan American Airways, Inc. who was scheduled to appear on the forum but could not attend) as saying a New York to London fare of $150 was in the offing in the postwar era. Damon did not believe such a rate was in sight, and he suggested a figure of $360 as more likely.

Asking Damon if he did not respect the opinion of the man who had built the greatest international airline in the world, Damon answered sharply "I have the greatest respect for the President of the Senator's favorite airline but I do not agree with his figure."

Cairo and Teheran opened our eyes to the highest hopes of aviation, not only as an instrument of war but more particularly as an instrument of understanding in bringing people together, said Wei Tao-Ming, the Chinese Ambassador, in his greetings to the forum. Charles Taft, special advisor on Supply and Resources to the Department of State presided.

Krug is Given More ARCO, ASU Power

War Production Board's Program Vice Chairman J. A. Krug has been given authority to delegate priority powers to the members of the Aircraft Resources Control Office and the Aircraft Scheduling Unit, an authority previously limited to the Chairman and the Executive Vice Chairman. An amendment of WPB Regulation 1, dated Dec. 31, 1943, makes these three top WPB officials parallel in this respect.

Krug

In addition to conferring a new sphere of delegation on the Program Vice Chairman, WPB Reg. 1 restates the general authority of the Chairman, the Executive Vice Chairman and the Program Vice Chairman to authorize the field offices of WPB and officials of other government agencies to take action in their own names. The object of the regulation is to ensure that WPB remains flexible as to personnel and able to assign to any of a great body of officials freedom to act without delay in urgent cases, when additional clearance might defer action and result in serious losses through failure to make necessary use of critical materials.

The linking of these three offices as joint sources for funneling the priorities powers is a significant indication of the stature of the Program Vice Chairman in that it indicates his office is on a par with the Chairman and Executive Vice Chairman for this important general exercise of WPB authority.

New Aero Courses at Syracuse

The College of Applied Science at Syracuse University announces a new and enlarged aeronautical engineering curriculum and 14 new courses designed to train personnel for postwar expansion of civilian aviation. Students wishing to specialize in aeronautical engineering will register in the mechanical engineering department.

New Orleans' International House Air-Minded

First steps in the organization of an International House in New Orleans, one of the objectives of which is to make New Orleans "Air Hub of the America's," has been taken with $220,000 of an expected $500,000 already underwritten for the project. The Citizens' Bank Building in New Orleans has been purchased by the International House association for $30,000.

One of the planks in the association's platform is to educate the people in the upper Missouri and Mississippi valley to become export minded with their eyes to the South. It is hoped to develop New Orleans as the major port in the South, for air as well as shipping, to the practical exclusion of Miami and Houston.

The association has received word from Secretary of State Hull that if it carries through its program, he would station in New Orleans a representative such as the Department of State now maintains in Miami. At the recent organization meeting of the association, Rudolf S. Hecht, member of the sponsoring committee, commented that Miami, with an international air passenger service of 100,000 persons a year, and a 31-foot channel to its port, is now claiming to be the "Gateway to the America's." Mobile and Houston, he said, have extensive plans for developing contacts with the other America's, and St. Louis, Louisville, and Oklahoma City are asking for ports of entry rights by air. He voiced confidence that New Orleans, with its own international gateway to the South, will soon be carrying 100,000 passengers annually.

Among those at the organization meeting was Andrew J. Higgins, head of Higgins enterprises, who urged that the project be expanded from the start to utilize the full advantages of the program.

The "know how"

of Gulf Service Engineers helps solve many plant problems

If you have a problem in any way connected with the use of a petroleum product, it will pay you to have a Gulf Service Engineer "in the picture"

There are many big plus values in using Gulf quality petroleum products, which are being converted to increased production and dollar savings in every major industry. These extra values include the helpful cooperation extended by Gulf Service Engineers.

With years of training and practical experience, Gulf Service Engineers *know how* to step up production efficiency by the scientific application of the proper petroleum products.

Increased production, longer bearing and tool life, improved quenching practice, better finishes on machined parts, improved rust prevention, lower maintenance costs — these are some of the results hundreds of plants are securing with Gulf Service Engineers "in the picture."

Let a Gulf Service Engineer assist your operating and production personnel in the selection and application of petroleum products best suited to your particular requirements.

Gulf Service is backed by our large corps of research engineers who are constantly studying industrial lubrication problems in our well-equipped laboratories.

GULF INDUSTRIAL LUBRICATION

GULF OIL CORPORATION
GULF REFINING COMPANY
GULF BUILDING, PITTSBURGH, PA.

Navy Orders 20 More Mars; Starts Own Ferry Service

EXPANSION of Naval aviation continued to play a prominent part in the news released from Washington during the past fortnight. The rapid growth of the Navy's air arm was particularly evident in the development of its transport activities, reflected in orders for more Mars supercargo planes and in the establishment of the Naval Air Ferry Command.

"The mushrooming production of warplanes" necessitated the creation of the ferrying service as an air wing under the Naval Air Transport Service. "Pickup and delivery of new Naval aircraft heretofore has been handled as a subdivision of the production activities of the Bureau of Aeronautics, but sharply increasing output of planes made advisable creation of an organization devoted exclusively to this work," the Navy stated.

Headed by Captain John W. King, headquarters are at Floyd Bennett Field, N. Y. At present, NAFC will have three ferry squadrons and one service squadron, operating within the United States but overseas operations are contemplated when production of large multi-engine aircraft, such as the Consolidated Navy Liberator, reaches a quantity stage. Ferry squadrons will be located at Floyd Bennett; San Pedro, Calif., and Columbus, O.

The Ferry Command already has more than 700 pilots on its roster, according to Navy reports. They fly about 200 planes a day en route to their destinations, usually in formations of three to six.

At a recent press conference, Secretary Knox confirmed earlier reports received by *American Aviation* that the Navy has ordered 20 more Mars cargo flying boats. He said the planes would be completed within a year and that a fixed-price contract had been negotiated with Glenn L. Martin containing the Navy's incentive clause which provides a bonus for decreased costs. "The new cargo transports will be practically identical with the prototype structurally," he said, "but extensive internal changes will be made to facilitate loading and increase cargo capacity." The Mars planes will operate with NATS squadrons, of which there are now 10 flying cargo and key personnel over a 70,000-mile network.

The expansion of the Naval air arm during 1943 "gives us world leadership in this type of warfare." Knox stated in a summary of the Navy's activities during the year. He said twice as many pilots were trained this year as last, bringing the total number of pilots to five times the number in the Navy at the beginning of the war.

"In the production of planes," Knox stated, "the second year of war has seen 2½ times as many planes built as were turned out in 1942, of which 75% were combat types compared with 50% combat types only a year ago. This accelerated rate of production and the higher percentage of combat aircraft built put three times as many combat planes on the fighting fronts as was possible in 1942."

Over 40 aircraft carriers are now in the fleet, six times as many as there were at the start of war, "and increasing the carrier's offensive sting are the Corsair and Hellcat fighters, the most powerful carrier-based fighting planes in the world," according to Knox. Knox also praised the Helldiver "now striking its first blows."

The completion of 100 new Naval Air Stations and auxiliary fields doubles the scope of 1942. A final factor pointed out is the great strides made in flight gear and rescue equipment.

Other reports indicate an unprecedented demand for aviation officers in the Navy. It is understood that more and more graduates of Annapolis are being encouraged to interest themselves in flying.

This expansion in aeronautical activities is not limited to the Navy. Indications that the Coast Guard may enlarge its aviation branch, taking over many flying patrol operations from the Navy were seen in the statement of Glenn L. Martin Co. that PBM-3 Mariners will soon be used by the Coast Guard. Instruction in maintenance and overhaul of the Mariner is now being given at the Martin plant to eight Coast Guard Engineering officers who will be assigned to stations on the Atlantic, Pacific and Gulf Coasts to supervise maintenance operations on the Mariners received by the Coast Guard.

Physically Handicapped May Fly 'If Experience, Ability and Judgment Qualify Him'

The physically handicapped, who have generally been prevented from obtaining a civilian pilot's license, received a break last month when the Civil Aeronautics Board amended Section 29.1 of the Civil Air Regulations waiving some of the standards involving physical deficiencies.

Under the new amendment, an airman certificate shall be issued to an applicant, other than an applicant for the original issuance of an airline transport pilot certificate, who does not meet the appropriate physical standards if his aeronautical experience, ability and judgment compensate for his physical deficiency and he meets all other requirements for the issuance of such a certificate.

The amendment requires that the certificate shall state that the applicant does not meet the appropriate prescribed standards but that his physical deficiencies were found to be compensated by demonstrated aeronautical experience, ability and judgment. The certificate, the amendment states, may limit the pilot to a type of operation, a type of aircraft or period of re-examination.

Hawthorne Buys Control Of Air Services Inc., D. C. Charter Operator

Beverly E. Howard, president of Hawthorne Flying Service, is shown signing papers giving him majority stock in Air Services, Inc. John S. Wynne, official of Air Services and well known Washington, D. C., aviation attorney, is shown at left. At right is W. R. Baldwin, Hawthorne treasurer.

Hawthorne Flying Service, of Orangeburg, S. C., headed by Beverly E. Howard, has acquired control of Air Services Inc., which holds sole rights to operate charter and sightseeing service from Washington National Airport, it was revealed last fortnight. Pilots and personnel from Hawthorne Field will operate the service.

Howard recently purchased the majority of Air Services' stock from John Wynne and Mrs. William Payne, widow of Capt. William Payne, organizer of the original company. The two will remain as officials of the company along with Howard and Joseph J. Mitchener, Jr., former CAA-WTS supervisor in CAA's Southeastern region and now directing Hawthorne's postwar development program.

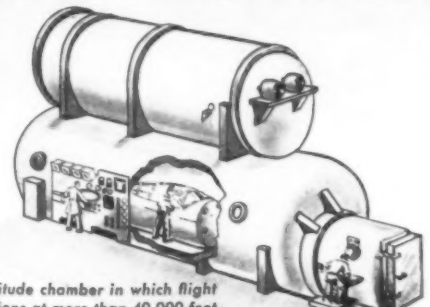
Air Services, Inc., is successor to Potomac Flying Service and Atlantic Seaboard Airways, which were organized in 1927. The old companies operated at Washington-Hoover airport before the present Washington National Airport was built. Hawthorne Field has been the training ground for thousands of pilots, without a fatal accident in its 11 years of operation.

Consairways Deal?

West coast sources report recurring talk about a deal between Consairways, the Army contract operator of Consolidated-Vultee Aircraft Corp., and a domestic airline. It is reliably reported that more than one commercial airline has conversed with Consolidated-Vultee on financing Consairways operations should this division be divorced from the manufacturing company. Several deals are understood to be pending but what decision is reached by the manufacturing company remains to be seen.

VAN SCOTT

KEEP YOUR EYE ON *Tomorrow's Horizons*



An altitude chamber in which flight conditions at more than 40,000 feet altitude can be simulated and one of the world's most modern wind tunnels are part of the equipment at the new Curtiss Research Laboratory.

Beyond measure are the engineering advances, the improvements in manufacturing methods, which are the product of Curtiss-Wright's vast wartime program. When war is done, this rich experience will give the world safer, speedier, more luxurious airliners—swifter, more economical cargo carriers.

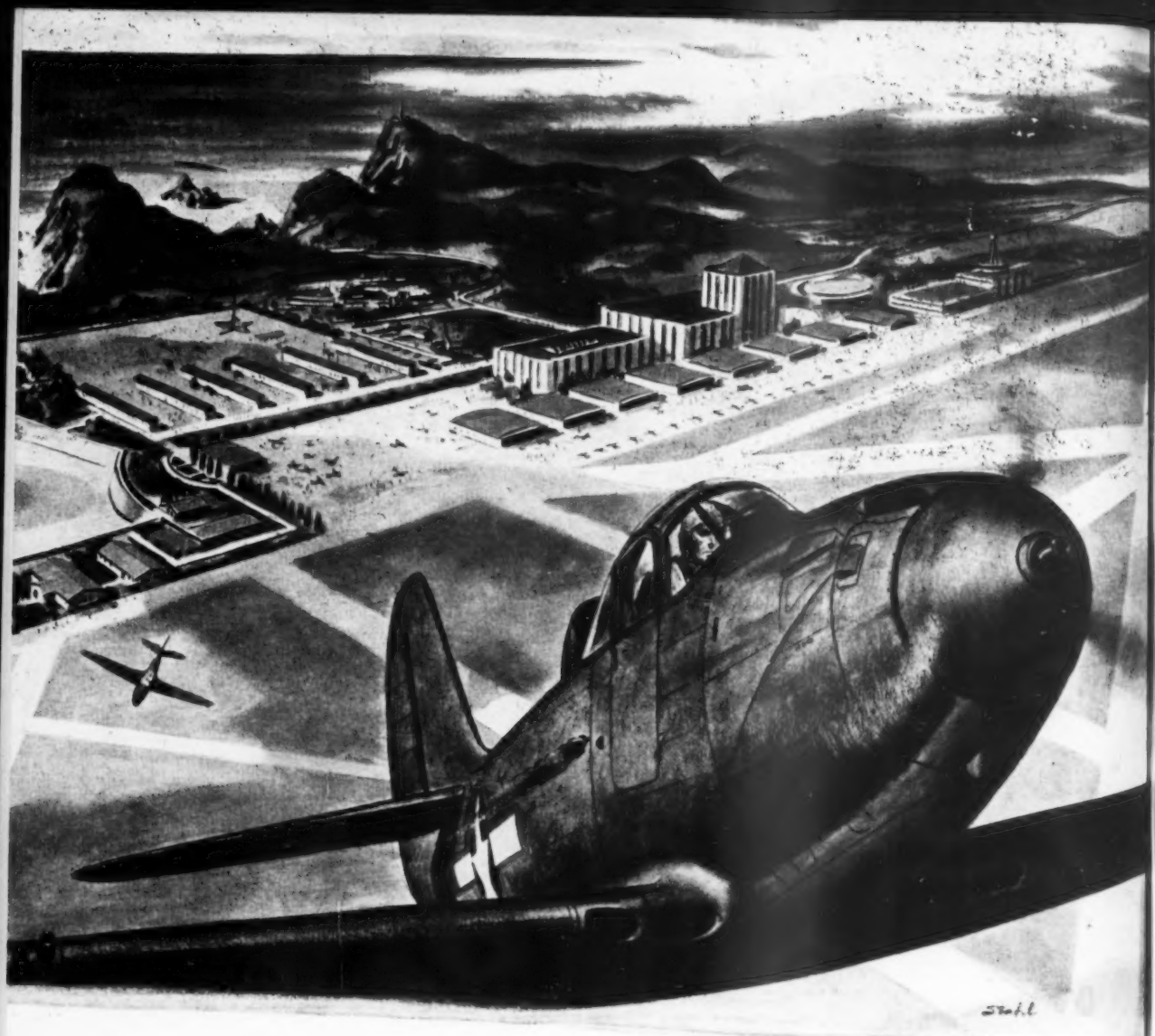
LOOK TO THE SKY, AMERICA!

CURTISS-WRIGHT Corporation

AIRPLANE DIVISION

BUFFALO • COLUMBUS • ST. LOUIS • LOUISVILLE

MEMBER, AIRCRAFT WAR PRODUCTION COUNCIL, EAST COAST, INC.



"SKYTOWN," U.S.A.
pop.: 2,000,000

Very soon now, there'll be well over 2,000,000 men in the U. S. Army Air Forces.

Flight is their business.

War has taught them the machines, the techniques, the language of flight. They recognize no impassable barriers of land or sea.

There's many a man among these two million who pilots the U. S. Army Bell Airacobra. In his single engine fighter, he can be 20,000 feet in the sky—seconds after he leaves the earth. Sixty minutes later he can be more than 400 miles away ... blasting out a pattern of victory with machine gun bullets and cannon shells.

It's as if he had moved to a strange new city (Skytown, U. S. A.) and adopted a new way of life.

MEMBER AIRCRAFT WAR PRODUCTION COUNCIL—EAST COAST, INC.

MAKE NO EARTHBOUND PLANS FOR THESE 2,000,000! After the war, they—and you—will fly. You'll fly in superior planes of peace because this war has taught us some lessons, too. How to break with precedent in designing aircraft to do specific jobs. How to pioneer better, faster, less costly methods of mass production. © Bell Aircraft Corporation, Buffalo and Niagara Falls, New York.

BELL *Aircraft*

AIRACOBRAS for victory—future planes for peace

BUY WAR BONDS AND SPEED VICTORY

Michigan Aviation Group Campaigning Against Lea Bill

A resolution requesting that aviation legislation be postponed by Congress until at least six months after the United States is at peace has been adopted by the Advisory Committee on Aviation of the State of Michigan and is being widely circulated. A letter by Bruce E. Anderson, chairman of the committee, accompanies the resolution. It specifically denounces the Lea Bill.

Although the resolution, letter, and an accompanying compilation of direct quotations from men in the Armed Forces highlight state's rights arguments in urging defeat of the bill, they also put the committee on record as favoring the opening of air transportation to surface carriers.

"No person or company whose proposed operations are in the public interest should be denied the right to engage in aviation," it is maintained.

Pointing out that aviation will be under military control until the end of the war, the question is asked: "Is it not absurd to pass new aviation regulations in the face of this condition?"

The airlines are charged with buying editorial support for the Lea bill with "advertising inducements." A direct quotation states: "This legislation was drafted in its entirety by the Air Transport Association and so cleverly worded as to completely tie in all other aviation in such a way as to effectively stifle any outside competition. The airlines have, through their representatives, been giving speeches all over the country in favor of the legislation. They have issued voluminous propaganda material for the benefit of those who couldn't or wouldn't read and analyze the bill and understand its effects. The airlines are at the present moment sending their representatives all over the nation to contact aviation editors of newspapers and magazines, holding out the inducement of advertising in return for articles and editorials favoring the legislation. In other words, they are busily engaged in a concerted drive to rush through a law in the absence of the men and women in the armed forces, the very people it will affect most."

Members of the committee are: J. Lee Barrett, Earl L. Bedell, Menso R. Bolt, Manferd Burleigh, Kit F. Clardy, Allen Dean, Henry Ford, II, William Mara, William B. Mayo, Frederick Mueller, Leroy C. Smith, S. S. Stewart, Sr., William B. Stout, Jerry Tyler, William Walker, Thomas E. Walsh, F. Spencer Weber, and Robert J. Wilson.

REA Reports New Records

Approximately 14,000 tons of air express cargo were flown over the 18 domestic airlines during 1943 as compared with 10,850 in 1942, the Air Express Division of Railway Express Agency reports. An average of 45 tons daily were flown over the 45,000-mile domestic airline network. Of the 5,000 air shipments flown per day, the average shipment weighed almost 20 pounds and was flown 1,000 miles. Approximately 1,500,000 shipments were carried in air service during the year, REA estimated.

Tipping His Hand

(An Editorial)

IT IS no secret that a considerable amount of the opposition to the pending Lea Bill creating an independent Civil Aeronautics Commission has been inspired directly or indirectly by railroads, steamship companies and motor carriers. Some of this opposition has been under the guise of protection to private flyers. One of the most vociferous of the new "champions" of private flyers is K. F. Clardy, an attorney of Lansing, Michigan, who has been working closely with the Michigan Board of Aeronautics.

Mr. Clardy tipped his hand very neatly in a memorandum on the Lea Bill which he prepared on behalf of the Michigan Board of Aeronautics for members of the national Congress. In his concluding remarks he made the flat statement as follows: "Since I make my living representing motor carriers . . ."

More than one person sincerely interested in the constructive growth and regulation of aviation has fallen for Clardy's voluminous and for the most part completely erroneous comments about the Lea Bill under the impression that he is speaking for private flyers. It can well be assumed that Mr. Clardy is not overlooking the interests of motor carriers—since he makes his living from them.

Philadelphia and San Diego Airports Are Closed to Transport Lines by New Orders

Two airports used by air transport lines were closed during the last fortnight—the Philadelphia Municipal Airport because of increased military activity near the field and Lindbergh Field, San Diego, due to inability of the port's control tower to handle safely the heavy flow of air traffic.

In the case of the Philadelphia Airport, the Civil Aeronautics Board issued a closing order after five carriers—All American Aviation, Inc., TWA, American Airlines, Inc., Eastern Air Lines, Inc. and United Air Lines—had filed a petition asking permission to discontinue service there.

The Board's order asserted that "intensified military activities in the vicinity of the Philadelphia Municipal Airport create special hazards and make the suspension of air carrier service at such airport desirable."

One Philadelphia newspaper asserted the following day that the closing was necessary because of munitions stored in nearby Fort Mifflin.

It was stated that the Naval Air Transport service will use the Willow Grove airport near Philadelphia. The Army, it is understood, has a number of fields in the vicinity which it can use.

Meanwhile airline passengers for Philadelphia are to be discharged at Reading, Harrisburg, Baltimore, and New York. Airmail consigned to Philadelphia will be placed on board trains at New York and Washington, it was stated.

Since the closing, All American Aviation has asked to extend its airmail-pickup operations to Washington so that Pennsylvania cities served by its operations will have a connection with air carriers serving the eastern seaboard.

The closing of Lindbergh field was by order of the CAA Field Inspector, Washington officials of CAA stated. Operations of Western, UAL and American are affected by the closing. Consolidated Vultee Aircraft Corp. also uses the field for factory tests and delivery service.

Production Started on 'Largest' Glider

Northwestern Aeronautical Corp., Minneapolis, expects to reach peak production of this giant glider, claimed to be the largest in the world, in 1944. Recently this craft, described by Air Forces officers as a tactical transport, had its first successful flight, towed by an Army C-47. The ship has a load capacity greater than a 2-motor Douglas plane of the type used by most airlines.

Alaska Seen As Center Of World Air Transport

THE REPORT of the Alaska Aeronautics and Communications Commission for the period of July 1, 1942 to June 30, 1943, released last fortnight, asserts that postwar planning places Alaska as the hub of world aviation operations.

Alaska's place in the future of aviation is predicated on two main considerations: 1. Its location on the great circle routes to Manila, Hong Kong, Calcutta and Bombay; 2. Its terrain and remote and sparsely settled areas.

"Much of the progress of a nation depends upon its communication and transportation facilities," the report stated. "This is also true of any Territory."

Stating that the nucleus of all communication within the Territory is the Alaska Communications System which is composed of 21 radio stations, the report disclosed that other communication systems are represented by the Office of Indian Affairs with 56 stations and the Alaska Aeronautics and Communications Commission with 19 stations. Fifty-three stations are licensed to individuals or communities.

"Approximately 850 communities have no communication and only 220 communities have post offices," the report stated.

In its summary of Alaskan Aircraft operations for the year ending June 30, 1943, the report noted a decrease in most phases of operations. It pointed out that the close of the fiscal year found six less operating carriers than at the beginning of the year.

"This decrease undoubtedly must be attributed to traveling restrictions, reduction of mining operations and military activities," the report explained.

Pounds of freight carried by Alaska airlines showed the greatest decrease of 48%. Mail showed the only increase, 62%, although April and June showed a 6 and 16% decrease respectively over the same months the previous year.

The "States to Alaska" Supplementary Report to the Alaskan Aircraft Operations Report for the year ending June 30, 1943, showed an increase of express and freight to Alaska of 34% and from Alaska of 468%. Mail to Alaska increased 27% and from Alaska 50%. Passenger traffic decreased 21% and passenger miles decreased 15%.

The members of the Alaska Aeronautics and Communications Commission are: Commissioners: Hon. Ernest Gruening, Governor of Alaska, chairman; Sheldon B. Simmons, Juneau, 1st Judicial Division, secretary; John M. Cross, Deering, Alaska, 2d Judicial Division; Thomas M. Donohoe, Anchorage, 3d Judicial Division and William L. Lavery, Fairbanks, 4th Judicial Division.

A summary report of Alaskan Aircraft operations for the year ending June 30, 1943, follows:

	Time Hours	Trips	Miles	Passengers	Passenger miles	Freight lbs.	Mail
July	4,133	1,622	453,601	5,912	1,240,116	316,408	147,022
August	4,254	1,805	493,641	6,432	1,504,338	313,206	211,120
September	3,275	1,395	367,421	4,974	1,131,142	254,422	163,354
October	2,257	1,085	258,105	3,145	766,884	168,990	124,218
November	1,722	730	201,918	2,122	531,406	146,520	115,723
December	1,890	828	213,605	2,361	617,746	164,035	162,531
January	1,427	616	162,819	1,754	379,571	123,102	94,309
February	1,310	608	150,264	1,563	337,610	93,153	117,926
March	2,125	1,011	248,056	2,773	732,297	203,251	125,267
April	2,589	1,240	305,996	3,755	806,696	253,207	90,769
May	3,062	1 414	367,089	5,376	1,042,538	210,345	100,232
June	4,042	1,434	478,418	5,634	1,060,125	180,468	91,431
TOTALS	32,091	13,788	3,700,903	45,801	10,150,469	2,427,107	1,548,902

Alaska Airlines Office in U. S.

Alaska Airlines has opened a Seattle ticket and reservations office with Roy Blockhus, former manager of the Alaska air travel bureau, as district manager. The new office is being opened "to serve the increasingly large number of Seattle passengers traveling by air to Alaska."

Insurance Widened

General average and salvage charges are now included in aircraft hull insurance policies covering flight risks at no additional premium, it was announced last fortnight by United States Aviation Underwriters, Inc. The extension applies to all such policies issued to scheduled airlines by member companies of the United States Aircraft Insurance Group, for which the USAU is underwriting manager.

Army Wants Rye 'Port Ready

The War Department has informed Westchester County, N. Y., that it does not intend to occupy at present the Westchester County Airport on Rye Lake, but that it must be kept available for military use until the end of the war.

Personal Aircraft Department of Aero Chamber Starts Job

(Picture on Page 1)

Looking into the postwar years with a view to assuring maximum utility of private planes in the hands of their owners, the newly formed Personal Aircraft Department of the Aeronautical Chamber of Commerce began its actual operations Jan. 1.

As manager of the new department, John E. P. Morgan, long a leader in the personal aircraft field, will have his office in Room 204 at 715 Fifteenth Street, N. W., Washington, D. C.

"Among the major objectives of this department," Morgan said, "are provision for adequate landing facilities for personal aircraft, the refinement of Federal and State regulations affecting personal aircraft and the education of the public in respect to effective use of aircraft as vehicles for business and pleasure purposes."

The new department is being operated under the guidance of the Chamber's Personal Aircraft Committee, of which Joseph T. Geuting, Jr., vice president of General Aircraft Corp., and William A. Mara of the Stinson Division of Consolidated Vultee Aircraft Corp. are chairman and vice chairman respectively.

Morgan for some time has been serving as Washington representative of Piper Aircraft Corp., Taylorcraft Aviation Corp. and Aeronca Aircraft Corp.

CAB Relaxes Civil Aviation Restrictions Imposed in '43

SOME OF THE RESTRICTIONS governing civil flying imposed following Pearl Harbor were relaxed by the Civil Aeronautics Board last month after Army and Navy members of the Interdepartmental Air Traffic Control Board gave their approval to recommendations which had been made by CAA and CAB some three months earlier.

The regulation which required considerable record keeping on the part of pilots flying outside of the vital defense areas was lifted by an amendment to Section 60.95 of the Emergency Flight rules. This reduced the civil pilot restrictions to two requirements which are as follows.

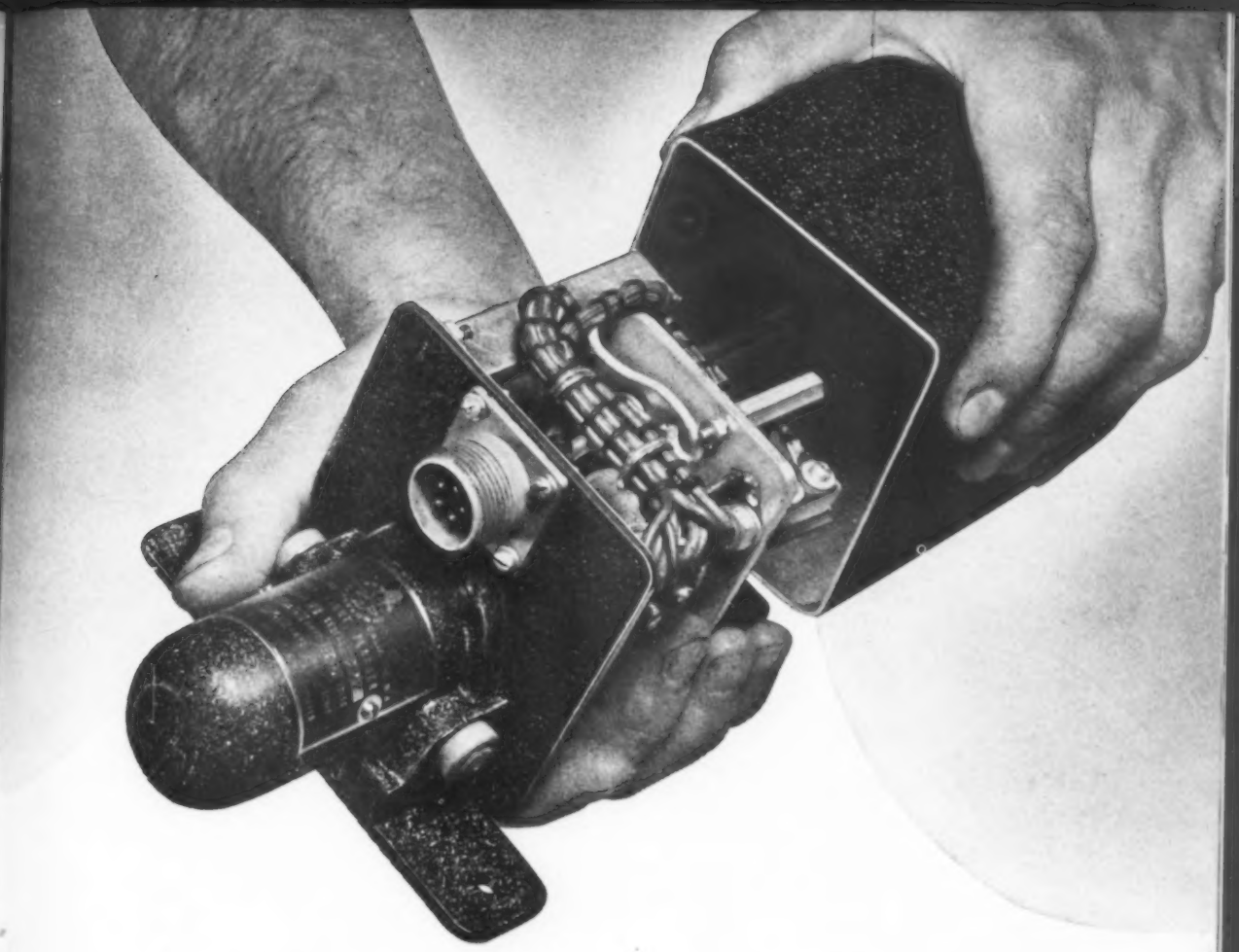
1. That the pilot shall use designated landing areas or make a report to the Administrator explaining why a designated landing area was not used.

2. That the pilot shall not pilot an aircraft into a vital defense zone unless specific authority for the flight has been obtained from the agency having jurisdiction over the area.

In addition, the amended rules provide that no person shall leave an aircraft unattended under circumstances that would permit its unauthorized use. Also there are two rules requiring the operators of designated airports to: 1. Make flight information available to pilots. 2. Keep an airport register or record containing information concerning the arrival and departure of aircraft including the names of the persons piloting the aircraft.

The pilot flying between points outside the vital defense areas will no longer be required to file information about his proposed flight and obtain clearance for it. Recording by airport authorities will be considered sufficient protection since all aircraft owners and pilots have already been investigated and certificated for loyalty by the CAA.

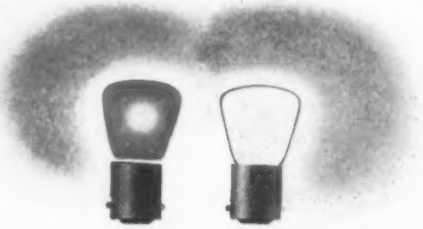
Charles I. Stanton, the Administrator, submitted a memorandum to the Board Aug. 12 recommending changes in the emergency flight regulations. They would have partially eliminated the necessity of flight clearances and arrival forms. On Aug. 20 the Safety Bureau of CAB submitted the Administrator's proposal, with a more liberal proposal, to the Interdepartmental Board for its consideration and recommendation. The military members of the Board finally gave approval so that the changes could be made.



Lightweight Position Light Flasher!

Built specifically to withstand both the vibration and temperature range of aircraft operation, and designed to operate in any position – mounted top, side or bottom – the Bendix Position Light Flasher offers new simplicity and reliability and is C.A.A. approved.

This Flasher, which is available for 12 or 24 volt operation, weighs only 2.1 pounds. It will operate from −65° F. to +160° F. in accordance with latest military winterization requirements. For safety, constant white light operation is provided in case of power failure. Simplicity of service and a minimum number of working parts are important features of the Flasher. Write for complete specifications and data. Bendix Aviation, Ltd., North Hollywood, California. Sales Engineering Offices in St. Louis, Dayton and New York.



The Bendix Aviation, Ltd., Flasher produces an accurate cycle forty times a minute of 150° of white light, 10° of no light, 150° of red light and 50° of no light.

Bendix Aviation, Ltd.
NORTH HOLLYWOOD, CALIF.
Subsidiary Bendix Aviation Corp.

Bendix Aviation Corporation

DESIGNERS AND MANUFACTURERS OF RADIO AND HYDRAULIC EQUIPMENT — OUR PART OF THE INVISIBLE CREW

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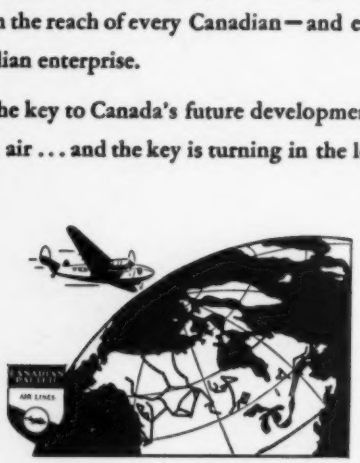
The Key is in the AIR...

No longer need nature's barriers bar the way to the full development of Canada's natural resources. The key that will unlock the door is—air transportation.

Today C.P.A. carries on the service begun by Canada's air pioneers . . . who opened a whole new continent in Canada's Northland. At the same time C.P.A. is engaged in building an integrated air system which, in co-operation with other lines, will bring air transportation within the reach of every Canadian—and every Canadian enterprise.

Yes, the key to Canada's future development is in the air . . . and the key is turning in the lock!



Canadian Pacific
AIR LINES

THE WINGS OF THE WORLD'S GREATEST TRAVEL SYSTEM

Institute of Aero Sciences Arranges 3-Day Program

The twelfth annual meeting of the Institute of the Aeronautical Sciences will be held in New York Jan. 24 to 27 with a wide range of technical papers scheduled for delivery. Technical sessions will be held in the Pupin Physics Laboratories of Columbia University, 120th Street and Broadway.

Election of council members will be at 5 P.M. Jan. 26. The annual Honors Night Dinner will be at 7 P.M., Jan. 24, in the Waldorf-Astoria Hotel. The tentative program, divided into sections, includes the following:

January 25

Aircraft Production: 1:30 P.M. Speakers will be Henry Grinsfelder and Thomas D. Perry, Resinous Products & Chemical Co.; R. W. Hess, Curtiss-Wright; M. Mages, Magnaflux Corp.; and Leonard Weiss, Brewster Aeronautical Corp.

Structures: 1:30 P.M. Speakers will be Charles E. Mack, Jr., Grumman Aircraft Engineering Corp.; William R. Osgood, National Bureau of Standards; Fletcher N. Platt, Fleetwings Division; F. A. Rappleyea and E. J. Eastman, Dow Chemical Co.; Edward Saibel, Carnegie Institute of Technology.

Air Transport: 7:30 P.M. Speakers and subjects: "Traffic Control Problems for Future Airports," M. G. Beard, American Airlines; "Daylight Training of Pilots for Night Flying," J. G. Beebe-Center, L. Carmichael and L. C. Mead, Tufts College; "Correlation of Aircraft Takeoff and Landing Characteristics with Airport Size," A. L. Morse, CAA; "Aircraft Hangars and Terminal Buildings of Reinforced Concrete," Charles S. Whitney, Consulting Engineer.

Materials: 7:30 P.M. Speakers will be Hiram Brown, Frontier Bronze Corp.; Carl Claus, Bound Brook Oil-Less Bearing Co.; Thomas H. Huff, Brasco Manufacturing Co.; D. A. Lawless, Reynolds Metals Co.; William S. Murray, The Indium Corp.

January 26

Aerodynamics: 1:30 P.M. Speakers: R. F. Anderson, Lockheed Aircraft Corp.; A. Flax, Curtiss-Wright; R. P. Harrington and Victor Zadikov, Polytechnic Institute of Brooklyn; Hans Kraft and Charles G. Dibble, General Electric Co.; John R. Weske, Case School of Applied Science.

Radio and Instruments: 1:30 P.M. Speakers: Stephen B. Elggren, Bell Aircraft Corp.; James George, CAA; W. Gille, Minneapolis-Honeywell Regulator Co.; W. P. Lear, Lear Avia, Inc.; P. Weiller and Victor E. Carbonara, Kollsman Instrument Division, Square D Co.

Aerodynamics, Part 2: 7:30 P.M. Speakers: Neil P. Bailey, General Electric Co.; Philip G. Blenkush, University of Detroit; J. Chvosta and John J. Jaclitch, Case School of Applied Science; Zbigniew Krzywoblocki, Polytechnic Institute of Brooklyn; Ernest G. Stout, Consolidated Vultee.

Power Plants and Propellers: 7:30 P.M. Speakers: C. W. Chillson, R. J. Kochenburger and P. J. Quinn, Propeller Division, Curtiss-Wright; H. L. Hansberry, CAA; Ralph J. Harker, Hamilton Standard Propellers Division; Lloyd H. Leonard Zimmer-Thomson Corp.; H. M. McCoy, Propeller Laboratory, Materiel Command, U. S. AAF, Wright Field.

January 27

Airplane Design: 1:30 P.M. Speakers: Albert A. Arnhym, Solar Aircraft Co.; Alex M. Gorfin, Matam Corp.; F. W. Hutchinson and B. F. Raber, University of California; John D. Pierson, The Glenn L. Martin Co.; G. L. Pigman, CAA.

Meteorology: 1:30 P.M. Speakers: Charles F. Brooks, Blue Hill Observatory, Harvard University; Donald M. Crowley, Transcontinental & Western Air; S. P. Fergusson, Blue Hill Observatory; Irving I. Schell, Blue Hill Observatory.

Rotating Wing Aircraft: 7:30 P.M. Subjects and speakers: "A Direct Method for Calculating Maximum Rate of Climb, Top Speed, and Other Useful Performance Characteristics of a Helicopter," by Walter Castles, Jr., Aviation Engineering, Inc. "The Response of Articulated Rotor Helicopters to Cyclic Blade Pitch Control" by A. F. Donovan and M. Goland, Airplane Division, Curtiss-Wright. "Aerodynamic Instability in Unbalanced Lifting Rotor Blades" by Reinhardt M. Rosenberg, Bell Aircraft Corp.

Films to be shown at this session include the PV-2 Helicopter by Frank Piasecki of the P-V Engineering Forum, the Sikorsky helicopter by Igor Sikorsky of United Aircraft Corp., and "Recent Progress on the Bell Helicopter" by Arthur M. Young, Bell Aircraft Corp.

Fort Wayne Calls Meeting Of Midwestern Airport Men

Two hundred airport managers in the Middle West have been invited to an airport planning conference in Fort Wayne, Ind., Feb. 18 and 19, by Robert T. Schott, manager of Smith-Field Municipal Airport there. In a letter of invitation from the Fort Wayne Board of Aviation Commissioners, Schott asks these questions:

1. Should the private pilot be given more attention in airport postwar planning?
2. Should municiual airports operate at a profit? Can they?
3. How far should Federal government control airport operations?
4. Is it good business to sign 15 or 20-year leases with airlines?
5. Should airlines pay the same for all weights of planes?
6. After how many scheduled flights should airlines operate free schedules?
7. How much is airport office space worth per square foot?
8. What should a fixed base operator pay for operating off your airport?

These and many other questions like them are expected to be answered at Fort Wayne. Airline men have been invited to tell their side of the airport story, and airport managers have been selected to speak on various subjects. Representatives of the Civil Aeronautics Administration have agreed to attend and tell of their plans for future airports, Schott announces.

N. Y. Limits Travel Ticket Fees

New York City has a new law making it a misdemeanor for individuals or business concerns to charge more than $1. as a premium for supplying tickets or other accommodations for airplane, railroad, or bus transportation.

Airport Planning Meet Scheduled At Kansas City

A "grass roots meeting for home town airport planners" has been scheduled by the Kansas City Chamber of Commerce for January 24 and 25 at Kansas City. City officials and officers of chambers of commerce in towns and cities throughout a nine-state area are being invited, according to Richard C. Murray, aviation commissioner of the chamber. The area includes Missouri, Nebraska, Iowa, Kansas, South Dakota, Wyoming, Colorado, Oklahoma, and Arkansas.

This is the second such regional Airport Planning Conference to be held under the auspices of the Kansas City association. The Local Air Service Conference on Nov. 23 brought together more than 300 persons, representing 92 cities in the Kansas City trade area, but in considering the various local-feeder-pickup services it became apparent that the principal interest of practically all—especially those representing the smaller cities—was in the postwar development of and uses of local airports. It was because of the popular demand expressed at this meeting that the January conference was called.

Complete program follows:

January 24

9:30 A.M.—Welcome by E. Lee Talman, Transcontinental and Western Air, vice president in charge of aviation department of Kansas City Chamber of Commerce; "Airport Planning and Requirements"—T. E. Flaherty, regional airport supervisor of airports, CAA; "Airport Requirements of Private Flying"—John Hagan, airport project chairman, Personal Aircraft Committee, Aeronautical Chamber of Commerce; "Airport Requirements of Airlines"—L. R. Inwood, executive assistant, TWA.

2:00 P.M.—"Municipal Airport Operation and Maintenance"—Donald E. Pratt, president, P-T Air Service, Hays, Kans.; "Privately Owned Airports"—Allen P. Green, Jr., president, Green Field, Mexico, Mo.; "Municipal Financing of Airports"—Alfred Macdonald, director of parks and airports, Wichita, Kans.; "Producing Income from Airport Activities"—Dudley M. Steele, manager, Lockheed Air Terminal, Burbank, Calif.

7:00 P.M. (Banquet)—Remarks from Mayor John B. Gage of Kansas City; "Community Airport Planning"—Congressman Jennings Randolph of West Virginia.

January 25

9:30 A.M.—"Army Airports"—Lt. Col. Edward D. James, AAF, Omaha; "Advantages and Uses of Turf Airports"—Dr. John Monteith, chief agronomist, U. S. Army Engineers, Washington, D. C.; "Airplane Sales and Service on Airports"—Roscoe Turner, president NATA; "Importance of Airports to Aviation Education"—William L. Wrinkle, educational consultant, CAA.

Indianapolis Airport Renamed

The Indianapolis municipal airport has been renamed Weir Cook Airport, in honor of the late Col. H. Weir Cook, who was killed in an airplane crash in the Pacific area March 21.

Less Than 4% of Planes Overseas Grounded by Lack of Spare Parts

THE NUMBER of Army Air Forces' aircraft grounded overseas for temporary lack of spare parts, a common operations problem for planes and other vehicles, is now less than 4%—a record low—it was disclosed last fortnight by the War Department.

In the United States, through the work of the Air Service Command, the supply and maintenance unit of the Army Air Forces, the proportion of planes grounded for want of parts is at a new low—6.3% for tactical planes, 3% for trainers. The domestic figure is higher than the overseas percentage for tactical aircraft because the latter are granted priority on supplies.

In one overseas theater, only 1.7% of American warplanes are out of service for want of parts.

The figures are considered remarkable, inasmuch as the proportion of military aircraft grounded for lack of parts (such ships are classified as AGP) ran up to 20% in peace times and during the early days of the war. It was in order to reduce this figure that Air Service Command was organized two years ago by order of Gen. H. H. Arnold, as a separate command within the AAF.

Since then, by utilizing every modern method known, plus many innovations, the ASC steadily has reduced the "AGP" percentage.

For purposes of comparison, in normal times most large trucking companies have an average of 5 or 6% of their rolling stock in garages for lack of spare parts.

To effect its improvements in aircraft supply, the ASC has built up the largest single radio and teletype communications system in the world and has set up high-priority rail, sea and air freight transportation routes. These extend to every Allied air base in the world.

Military observers overseas have found that aircraft supplies have arrived at the most advanced bases, despite the fact that supply and repair installations of Air Service Command units frequently are hundreds of miles away. These units, in turn, may need to call upon main bases thousands of miles away. Whether the parts needed comprise a complete freighter load or a two-pound parcel, Air Service Command makes it a policy to dispatch supplies within a matter of hours after any request has been received.

WLB Widens Scope of Airframe Panel

Aircraft industrialists are hopefully watching developments at the War Labor Board in an effort to determine whether transferral of all major voluntary cases to the Airframe Panel will speed up decisions on the backlog of over 60 unsettled cases. In the past the Panel had jurisdiction over dispute cases, but by a recent revision it will consider both voluntary and dispute cases concerned with wage or salary issues.

Industry spokesmen also foresaw possibilities of speeded action when War Manpower Commission and War Production Board set up machinery to facilitate cooperation in advising the War Labor Board on wage cases which are hampering production. The agreement provides that the two agencies will make joint representations to NWLB on cases where wages are the key factor in securing adequate production. Previously only Army and Navy could bring pressures to bear on the Board to assign priorities to critical aircraft cases and the number of cases they could affect was limited.

Under the new jurisdictional rules governing the National Airframe Panel, its jurisdiction is limited to wage or salary issues in major dispute and major voluntary cases, which substantially affect either the general wage structure of the airframe companies on the list to be approved by the Board or the wage stablization policy of the airframe industry. Compilation of the list of companies is not yet completed, War Labor Board spokesmen report.

The appointment of Thomas H. Eliot as Chairman of the Board replacing Thomas L. Norton was also announced recently. Eliot is a former Congressman from Massachusetts and has served as general counsel of the Social Security Board. Other members are: industry representatives, John Meade of Bell Aircraft and C. R. Hook, Jr., of Rustless Iron and Steel Corp.; labor members: Garry Cotton, IAM-AFL and Ed Hall, UAW-CIO.

A similar tri-partite panel has been appointed to hold hearings during January in Los Angeles on evidence presented by UAW-CIO, IAM-AFL and the United Aircraft Welders of America (Ind.) on their requests for revision of wage rate schedules in seven aircraft companies in that area. The panel will also hear replies to the union petitions by the companies: Consolidated Vultee Corp.; Douglas Aircraft Co.; Lockheed Aircraft Co.; North American Aviation, Inc.; Northrop Aircraft, Inc.; Ryan Aeronautical Co.; and Vega Aircraft Corp.

The West Coast Aircraft Committee has been instructed to undertake immediately "an over-all study, including necessary hearings and examinations of work in progress, of the job evaluations and job descriptions of the Southern California Aircraft Industry plan." Up for consideration by NWLB now is a request by West Coast aircraft parts plants for SCAI rates for technical and office workers.

Price Adjustment Board Appoints Staff Members

War Department Price Adjustment Board has added Lt. Colonel Gladding B. Coit and Lt. Colonel William C. Harrington to its staff. Coit is Chief of the Renegotiation Branch of the Renegotiation Division, Army Service Forces and Assistant to the Chairman of the Board. Harrington is Chief of the Field Operations Branch of the Renegotiation Division.

The new members succeed Arnold G. Stifel of St. Louis and Lt. Col. Paul B. Boyd. Coit has been treasurer of the U. S. Mortgage and Trust Co., chairman of the Industrial Loan Review Committee of Reconstruction Finance Corp., and vice president of Industrial Investment Trust, Inc. Harrington is part owner of Spratlin, Harrington, and Thomas, a general insurance and mortgage banking firm in Atlanta, Ga., and member of the board of governors of the Mortgage Banking Association of America.

Other members of the board are Joseph M. Dodge, chairman; Maurice Hirsch, vice chairman and Carman G. Blough, War Production Board representative.

Air Traffic Expert Hired By Four British Railways

Evidence that the four British railways will develop their air travel interests after the war is given in the recent appointment of D. H. Handover, former traffic director of British Overseas Airways Corp., as adviser.

Handover, 47 years old, entered aviation in 1919 with the first airline established by Sir Samuel Instone, ship owner. As adviser to the four railroads—London, Midlands, and Scottish; London and Northeastern; Great Western and Southern—he is expected to expand a program begun 10 years ago. The railroads are at present interested in 16 air companies, five of which are operating services.

British Airmen Get Important Positions on Invasion Staff

Two top spots on the Allied "invasion" staff have been given to well-known British airmen, emphasizing the important part which airpower will play in the coming blows at the Continent.

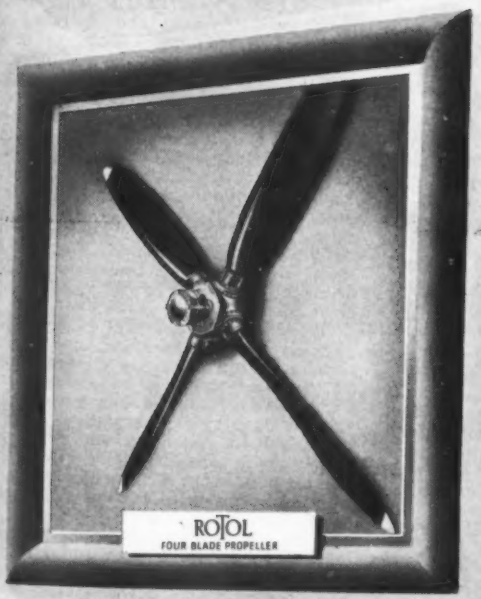
Air Chief Marshal Sir Arthur Tedder, former commander in chief of the Mediterranean Air Command, was named Deputy Supreme Commander of the invasion forces under Gen. Eisenhower. In this position, his duties will be much the same as those of Gen. Eisenhower, i.e., overall direction of the invasion.

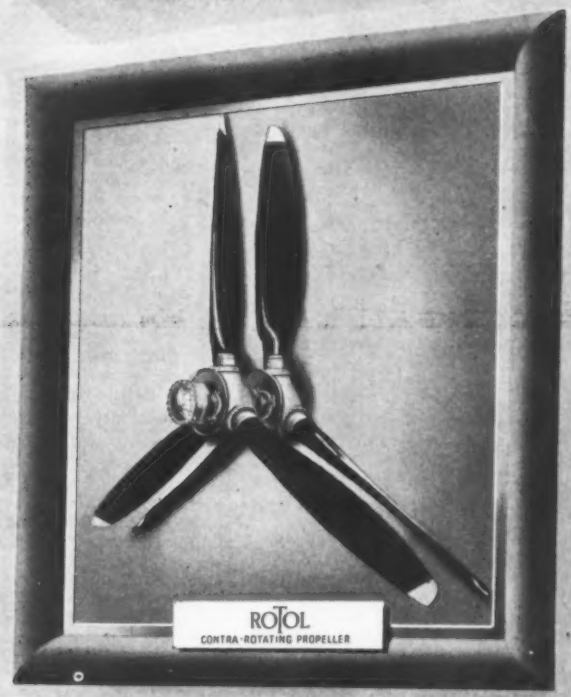
Air Marshal Trafford L. Leigh-Mallory, head of the RAF fighter command, was appointed Air Commander in Chief. His direct interest will be almost solely in the tactical air operations connected with the invasion.

Other air appointments include: Maj. Gen. James H. Doolittle, former commander of the 15th Air Force, named commander of the 8th Air Force. Maj. Gen. Nathan Twining, former commander of the 13th Air Force in the South Pacific, took over the 15th.

Lieut. Gen. Carl A. Spaatz was named commander of U. S. strategic air forces for both Europe and the Mediterranean; Lieut. Gen. Ira Eaker, former commander of the 8th, has taken over all Allied air units operating in the Mediterranean.

Of Marshal Tedder's appointment, *New York Times* Correspondent Frederick Graham said: "Marshal Tedder is an airman's airman in that he is no champion of orthodoxy and tradition in the military sense . . . There is no question in British minds that Marshal Tedder is the foremost air strategist so far as tactical bombing and fighting are concerned."





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ROTOL AIRSCREWS LIMITED, ENGLAND.

Parent Companies: ROLLS-ROYCE LIMITED & THE BRISTOL AEROPLANE CO. LIMITED. Canadian Representatives: BRITISH AEROPLANE ENGINES LTD. MONTREAL

Air Imports Analyzed

(Continued from page 20)

Transport Service, commercial, and foreign planes operating overseas.

Many of our most important production programs, particularly aircraft parts and electronics, are in good part supplied by strategic raw materials flown from India, Africa, Australia, and Latin America, and flown out of China by the Army and China National Aviation Corp. over 20,000 ft. mountains.

Our priorities job has been essentially simple, since we first put out a priorities schedule in March, 1942. Careful analysis is made of the raw material requirements of industry for making war equipment, of the status of stockpiles here, and of the world supply situation. The latter is important, for some of the materials are so scarce the world over that any losses at sea would be irreplaceable, and would therefore cut seriously into production.

Ownership Unimportant

In point of fact, 90% of the materials for which we have given priority are owned by the Governments of the U.S.A., United Kingdom, or U.S.S.R. But priority depends upon the importance of the material and not upon its ownership. Applications for priority from private importers are therefore given the same consideration as applications from U. S. or Allied Government agencies.

Monthly schedules of shipments by air from foreign points are established so as to time the arrival of the right quantity of the right materials to fit into production. These general schedules are all discussed and reviewed by the Interdepartmental Air Cargo Priorities Committee, on which sit representatives of the industry divisions of the War Production Board, the A.T.C., the N.A.T.S., the State, Department, the Foreign Economic Administration, and other interested agencies of the U. S. government, as well as representatives of the governments of the United Kingdom and the U.S.S.R. Naturally, the requests of the U.K. and U.S.S.R. are given equal treatment with requests to fly materials for U.S. consumption, since it is equally important to keep up their production of war equipment.

A word here on the timing of the arrival of the material. We have often scheduled imports by air so the raw materials arrived just a few hours before a radio or aircraft parts factory would have closed down. That is the popular view of where air transportation counts. However, usually the raw materials have to be scheduled to arrive two to three weeks or more before they will be needed by the manufacturer of the end products. This is a less spectacular performance, but necessary since the raw materials must often be processed before they can be used by final manufacturer.

Final Schedule:

The final priorities schedule consists of a list of materials rated from A-1-a at top to B-3 at the bottom, and a schedule of shipments per month for each commodity from foreign airports. Special shipments of materials not included in the general list are covered by individual air cargo priority certificates. These schedules and special certificates are transmitted by the War Production Board to the Army Air Transport Command and Naval Air Transport Service to be handled along with their priority passengers, mail, and military equipment on their own planes or on commercial planes operating overseas. Assistance is also given by the R.A.F. Transport Command, under the leadership of Air Chief Marshal Bowhill, and by B.O.A.C. and other commercial planes under British control. These air transport commands fly the materials and have been meeting our schedules regularly.

To them, particularly the A.T.C. and N.A.T.S., goes the basic credit for the success of this program.

Among important shipments handled by Pan American-Grace Airways have been large cargoes of onion-seed, which were flown under priority from Argentina to the U. S. for transshipment elsewhere to alleviate a shortage.

Handling Materials Overseas

There is another important job to be done overseas, less dramatic but very necessary. That is to produce, purchase, package, label, record, and get to the right airport at the right time the right amount of the right quality of the materials specified on the schedules. That's a lot of "rights"! Obviously the Army and Navy cannot fly the materials unless they are delivered to the air bases. For U.S. materials, the job is done by the Office of Economic Warfare, now re-christened Foreign Economic Administration, with the assistance in some places of the representatives of the State Department. F.H.A. handles nearly all the materials flown for U.S. account and also assists the U.K. and U.S.S.R.

As far as U. S. imports go, there are, of course, two types: First, by private importers and, secondly, by the government, F.E.A., which receive directives from W.P.B. to purchase materials when private trade is inadequate to get all we need of a certain commodity. In total, about two-thirds of our imports are through private hands; but nine-tenths of the American materials imported by air are owned by the government, which is buying most of the important rare minerals. These government purchases are all handled overseas by F.E.A. In addition, F.E.A., at our request, takes custody and handles privately-owned imports which are given priority, with the exception of private imports travelling on commercial planes.

Whereas formerly we were very much in the dark as to how the materials were moving, we now get full information from the Air Transport Division of F.E.A. Cables come to us on the 10th, 20th, and last day of each month from the foreign airports reporting just what was shipped, what is backlogged at the airport, and what new arrivals of materials are expected. We then add up these three cables to compare actual performance with the schedules for the calendar month.

Planned in Advance

The FEA's estimates of future availability of materials for air transportation as well as their prompt and accurate cables on movements enabled the WPB to plan in advance the allocation of strategic raw materials to war industries.

Last spring and summer, I had occasion while overseas to observe at first hand in Brazil, Africa, India, and China, the fine work of these F.E.A. cargo men and their close cooperation with the officers of A.T.C. and N.A.T.S. who are responsible for loading and operating the planes. FEA deserves a lot of credit for handling and reporting the air cargo.

Naturally what counts is the speed of shipment from point of origin to point of consumption. Raw material stuck at an airport in the States is of as little use to a factory working on Army and Navy orders, as if the material were still in India. Among the pilots and traffic officers with whom I talked overseas were circulating a good many stories of delays in handling, of flying in a load of mica to an airport in the U. S. and of seeing the same load sitting at the same airport on their next flight to the States.

This situation which did exist in a few instances, has been rectified, and materials arriving by plane are now cleared through Customs and trans-shipped to destination within 24 to 48 hours after arrival. This work is done by representatives of F.E.A. and the R.F.C. agencies, who work very closely with the Naval Air Transport Service and Army Air Service Command, who are in charge of the many air freight depots in this country.

These and other kinks in the system of imports by air have been and are being ironed out by the cooperation of the various government agencies concerned.

Conclusion

In December 1943, this air cargo program was climaxed by the flight of the Navy's giant seaplane MARS, bringing from Brazil 35,000 lbs. of mica and tantalite, the greatest load of strategic materials ever carried in a single plane. These materials, urgently needed for radio and electronics production, ride "ahead of Admirals" as the Secretary of the Navy put it in his press conference.

Both the cargo and the plane are milestones in aviation.

(Turn to page 39)

WRIGHT POWERS THE TONNAGE OF THE AIR

FREE AIR HORSEPOWER

FIGHT INFANTILE PARALYSIS JANUARY 14-31

An aircraft engine supercharger is not a mysterious device; it is simply an air pump. By compressing more air into a cylinder, more fuel may be burned during each power stroke—which in turn means greater output. At sea level or altitude, whether turbo or gear driven, a supercharger's sole purpose is to increase engine horsepower.

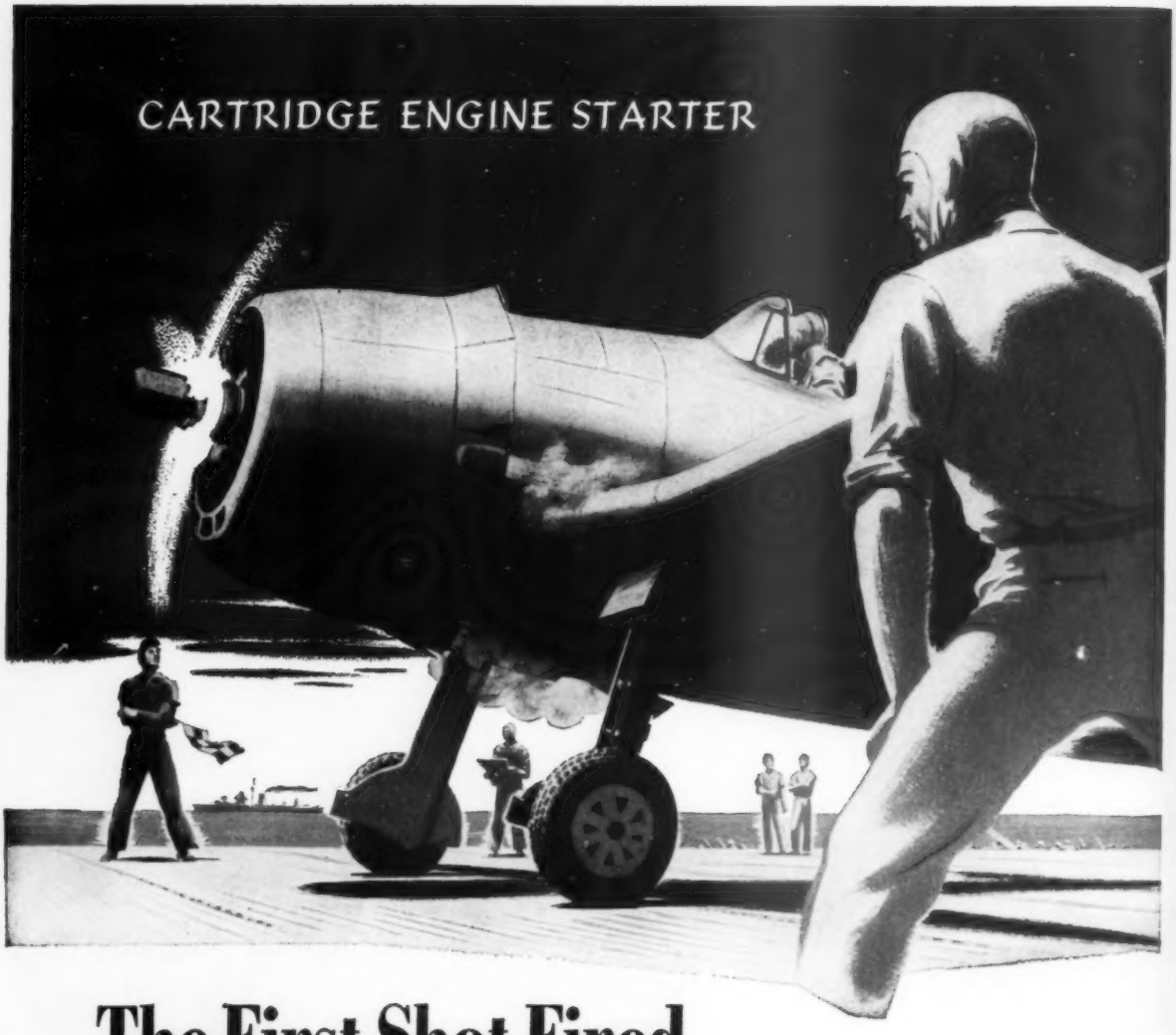
Although it takes power to pump air with a supercharger, the result is a dividend of free horsepower far exceeding the investment. Flight at high altitude is impossible unless the rarefied air is first compressed, while in a Cyclone 9 at take-off, 100 HP spent to drive the supercharger rewards the engine with 500 additional horsepower at the crankshaft.

★ ★ ★

Superchargers, like Cyclones, pay their way.

A supercharger supplies combustion air at greater density, permitting increased engine power.

Cyclones and Whirlwinds · Light · Compact · Powerful **WRIGHT** *Aircraft Engines*



The First Shot Fired

For Lightning-fast Getaways, Navy Fighters Depend on Breeze Cartridge Engine Starters

Operating on the same principle as the familiar spiral-drive screwdriver, the Breeze Starter spins engine over at 180 RPM, under 30-ton thrust developed by slow-burning cartridge fuel.

Manufactured under Coffman Patents

THE first shot fired in modern combat is the charge in the breech of a Breeze Cartridge-Type Engine Starter, spurring latent horsepower into instantaneous life, smoothly and without shock to engine parts. From arctic to tropic theatres, these starters are relied upon for quick getaways without the use of auxiliary starting equipment, out of the question on flight decks.

Simplicity of design and rugged construction make service problems virtually non-existent in this type of starter. Saving as much as 20 lbs., the Breeze Starter also obviates the use of heavy starting batteries. Delivering more than a foot-TON of torque from a 2 oz. cartridge, Breeze is the accepted starter for the big fighter engines today, is ready for higher power of tomorrow.

BREEZE

Breeze

CORPORATIONS, INC., NEWARK, N. J.

PRODUCTION FOR VICTORY • PRODUCTS FOR PEACE

(Continued from page 38)

The MARS of 1943, 88 gross tons, is bigger than the average American vessel of 1798, the sailing ships of our early history! That comparison gives some idea of the stage of evolution which cargo planes have now reached.

But whatever aviation may do in the future, right now the Army, Navy, commercial and foreign airlines are doing one of the finest supply operations of the war in flying the strategic raw materials which are most needed in the production of war equipment.

A couple of historical comparisons between modern planes and ancient ships are interesting:

(a) *Size.* In 1798, there were built and registered in the U.S.A. 635 sailing vessels with a total gross tonnage of 49,435. (Gross tons of capacity for cargo, passengers, and gear-100 cubic feet.) Dividing that out, we find the average American ocean vessel in 1798 to have been 77 gross tons—only 87% as big as the gross tonnage of the MARS computed on exactly the same basis!

It has been suggested that these figures on sailing ships in 1798 include some small coastal vessels, and hence a fairer comparison would be between the MARS and the sailing ships which were engaged only in ocean-going foreign commerce. However, there are no exact records on the size of ocean-going ships as distinct from coastwise vessels in our early history. What records there are do show that small ships were used to sail the ocean. Square-topsail schooners of 75 gross tons sailed off-shore trade to the Mediterranean at the turn of the 19th century and the "Enterprise", weighing 5 tons less than the MARS traded with China in 1785. But the Maritime experts in Washington tell me that the typical ocean-going vessel engaged in foreign trade at the beginning of the 19th century was about 150-200 gross tons more than twice the size of the MARS. This should caution us against extremist views on the size of modern planes.

(b) *Volume of Cargo.* In 1812, another war year, imports into the U.S.A. nearly all by ocean ship, were $77,030,000. As noted above in this article, the value of imported materials moved by air in 1943, totalled $116,000,000—one and one-half times as valuable as our total imports in the year of 1812! Some persons may object, as I did when I first saw these figures, that the dollar in 1812 was quite a different article than in 1943, and so it is. But the comparison is not altogether unfair, and I am informed by the experts that the price index in 1812 was 106, compared to 103 for 1943. (1926 price levels—100)

As the reader can see, I have not been able yet, even after quite a little research, to work out comparisons between modern air cargo and ancient ship cargo in strictly comparable units, but, even if not exact, the comparisons do help to show where we stand, on the ladder of evolution.

(Sources: Maritime Commission; Tariff Commission; Naval Air Transport Service; "Merchant Marine Statistics"—Department of Commerce 1932; Bureau of Labor Statistics; "Statistical Abstract of the U.S.", "American Maritime Industries" by J. G. B. Hutchins; "American Merchant Marine" by Winthrop Marvin.)

NOTE: The opinions or assertions in this article are the private ones of the writer, and are not to be construed as official or reflecting the views of the Navy Department or the Naval service at large.)

NAA Lists Objections to Lea Aviation Bill

A subcommittee of the National Aeronautic Association completed a report on objections to the Lea bill during the fortnight, following up the decision of the Board of Directors of NAA to oppose passage of the measure in its present form.

The subcommittee, composed of George B. Logan, J. R. Graham, and Major Harry Coffey, listed the three fundamental reasons for NAA's opposition to the bill, as follows:

"A. There is an unjustified extension of Federal control over aeronautical matters heretofore, and properly, reserved to the several states, such as private flying, non-scheduled operations, fixed-base operations, including training schools, etc., and intra-state commerce.

"B. There is an unfair discrimination in favor of *existing* air carriers as against those who might desire, and whom the public will undoubtedly need, to enter the field of air commerce.

"C. There is an unwarranted entrance of the Government into the field of private enterprise, to-wit, the educating and training of pilots, mechanics, etc." The report, however, endorsed the present practice of the Civil Aeronautics Authority of contracting with private schools for aviation training basing its objection on the fear that the Lea bill would open the door to the Government itself taking over the training and operating its own schools.

On the first point, the subcommittee observed that under the Lea bill "air traffic rules issued by the Federal Government alone will apparently control all flyers, all airmen, all aircraft, all air contractors, all employes of air contractors, all airports, all aeronautical schools and all repair stations!"

The bill also gives the Federal Government "control of standards and certificates for all air navigation facilities, including airports, lights, weather information, radio, electrical communication, etc., irrespective of its use for interstate commerce," it is pointed out.

Declaring that the Lea measure places "absolutely *no* limitation upon the extension of Federal power" in this respect, the subcommittee referred to its provisions as "a wholesale grab of Federal authority" and "verily a wholesale destruction of all states' rights and a wholesale disregard of the provisions of the Federal Constitution concerning interstate commerce!"

On the second point, the subcommittee maintained that the declaration of policy of the Lea bill proposes to protect existing air transportation companies from "competition." The declaration of policy of the Civil Aeronautics Act of 1938, by contrast, the subcommittee said, was designed to foster the "development" of air transportation.

A result of the stipulations of the Lea measure will be to take charter air service away from the fixed-base operators and "deliberately lay it in the lap of the air carriers," the subcommittee objected.

It summed up: "Thus, the persons who are now performing, and might be expected to continue to perform the non-scheduled and charter services of the U. S., will be sorely hampered and crippled in the regulations pertaining thereto, and the air carriers will be permitted to perform these same services without being limited to points or areas and without any additional certificate required, and perhaps without schedule of rates or fares."

On the third point, the subcommittee objected that the Lea bill limits Federal subsidies to air carriers, excluding "air contractors."

"We are unable to see why the present air carriers need all the protection thrown about them, or why such onerous burdens are put on special and charter services for 'air contractors' and not 'air carriers'", the subcommittee commented.

It also objected that the bill's provisions would make it possible for the Federal Government to institute its own pilot and mechanic training programs to the displacement of existing colleges and aviation training schools.

Speaking of the aeronautical training program provided by the Lea bill, the subcommittee declared: "This program may *look* like the continuation of the existing air schools. On the other hand, it may also look like the beginning of the end for private enterprise in this field."

The subcommittee also disapproved of the bill's provisions on aviation insurance, indicating the belief that they were first steps toward putting the U. S. Government into the aviation insurance business.

Navy Given Complete Charge of Patrolling U. S. Coasts

The air war against submarines has been turned over to the Navy by the Army Air Forces during the past fortnight. This action is viewed in Washington as Army recognition that land-based bombers alone are inadequate to the task, that anti-submarine combat must be a combined operation by sea and aircraft.

The Navy will now assume full responsibility for coastal patrol of the United States, a job which has formerly been divided between Navy's lighter-than-air command, Navy's ship patrol, and the Army Air Forces Anti-Submarine Command. The Navy announced that it has acquired sufficient planes and trained sufficient crews to take over complete responsibility against the submarine menace.

The AAF Anti-Submarine Command was activated in October, 1942, under Brigadier General Westside T. Larson as an outgrowth of the First Bomber Command, which began its submarine combat work immediately after Pearl Harbor. Wings and squadrons were organized for combat patrol work, and assignments made to theatres of operations. The Anti-Submarine Command has spread out to four continents and has flown a substantial portion of the total number of miles flown by Allied aircraft since December, 1941.

Units which operated for the Army Air Forces will be absorbed for other combat duty by various air forces. Meanwhile the Navy takes over, transferring some of its seaplanes and carrier-based planes to anti-submarine duty. There are indications in Washington that the Army will also transfer some land-based bombers to the Navy for use in its new Command.

CAB to Act on Applications For Air Routes to Canada

Proposals Will Be Consolidated for Hearing Purposes

By GERARD B. DOBBEN

INTERNATIONAL air transport won the spotlight in aviation circles during the closing days of 1943 when the Civil Aeronautics Board restored to its active calendar all applications involving service to Canada.

Implementing with action the order of restoration, the Board's Chief Examiner C. Edward Leasure has notified five certificated carriers and one non-certificated applicant of his intention to recommend consolidation for hearing purposes of all proposals for routes between the United States and Montreal and Ottawa, Canada.

The Board's action stemmed directly from an impasse which developed during a recent prehearing conference involving the application of Colonial Airlines, Inc. for a route between Washington, D. C., and the border town of Massena, N. Y. Because Colonial had originally filed for a route between Massena and Ottawa, Canada and later amended its application for domestic service only, other carriers objected to its consideration on a domestic basis only and contended all other applications involving service to the Canadian border and into Canada should be heard at the same time. Because of this situation, CAB Examiners William J. Madden and H. Heinrich Spang decided to go to the Board for further instructions.

Restoration of the Canadian applications to the Board's active calendar has raised many interesting questions. One of them is: Just how far does the Board propose to go in awarding foreign certificates in the absence of a new international air transport policy which seems certain to be promulgated?

While it is true that theoretically, the U. S.-Canadian reciprocal air navigation arrangement of Dec. 3, 1940 still remains in force and effect because of its extension from March 4, 1943 until the end of the war, the Board's authority to grant certificates for foreign routes has been openly challenged by Sen. Pat McCarran (D. Nev.) a member of the Senate Commerce committee and the author of the Civil Aeronautics Act. Senator McCarran believes that if CAB is permitted to grant certificates for foreign routes, it inadvertently will be establishing the foreign airline policy of the U. S. It is understood that there are other members of the Commerce committee who endorse McCarran's position.

After CAB Chairman L. Welch Pogue recently appeared before an executive session of the Commerce committee. *American Aviation* reporters were told that Pogue had confirmed the position held by McCarran and other Senators. He was reported as having stated that CAB was aware of the fact that it was an executive, not a policy making agency, and that its function was to execute the policy laid down by Congress.

Pogue, it was learned, informed members of the Committee that the purpose of CAB in holding hearings on foreign route applications was to gather information so as to be prepared, once the foreign airline policy of the United States is established by Congress, to act expeditiously on applications.

However under the terms of agreement with Canada, it is conceivable that CAB could actually grant certificates for routes to points in Canada. Under the provisions of the arrangement which expired Dec. 31, 1942 but which was extended by both countries March 4, 1943 until the end of the war, definite points were named in both U. S. and Canada for reciprocal air transport routes. Some of these points were later connected by international air transport service. Others were not.

One of these points is Windsor, Canada, and under the terms of the agreement, a qualified U. S. airline could be given a certificate to fly from "all points in the U. S. to Windsor." Similarly a Canadian company could be granted permission to fly from "all points in Canada" to Detroit.

Future international air policies of the United States are now in the debate stage with 16 domestic airlines arguing for free and open competition for the air routes of the world and at least two other carriers, one already engaged in international air transportation, favoring a form of "chosen instrument" policy whereby one big American airline would represent this country in the international air transport field.

Regardless of how the CAB proceedings end, an actual hearing on the Canadian applications will probably be scheduled for March depending on the dispositions made at the next prehearing conference which will be held the latter part of January or early February.

In his letter to the air carriers, Leasure stated that he proposed to recommend to the Board consolidation of the following applications: Colonial Airlines, Inc. for a route between Washington, D. C. to Ottawa, Canada, via Massena, N. Y.; American Airlines, Inc. for a route between Syracuse and Montreal via Ottawa; Eastern Air Lines, Inc. between Baltimore and Montreal, Pennsylvania-Central Airlines Corp. between Buffalo and Ottawa and United Air Lines between Cleveland and Montreal. Included in the consolidation suggested by Leasure is the non-certificated fixed-base operator—Paige Airways, Inc. requesting a route from Rochester, N. Y. to Washington, D. C.

All other applicants who have applications on file for routes in this section of the United States together with non-certificated applicants who are asking for a variety of transport routes to Canada were sent copies of the letters. Original letters were sent only to the applicants represented at the pre-hearing conference on Colonial's application for a route between Washington and Massena, N. Y.

Leasure asked all applicants to submit in writing any suggestions which they might have for further consolidation and he expressly requested that all parties to be invited to the forthcoming prehearing conference come prepared to definitely state their positions and furnish a summary of their cases. This is being done so that the date of the formal hearing can be set for early spring.

A brief summary of all applications on file for service to Canada, including some applications which request routes to fly over Canada, to other points follows:

(Turn to page 66)

CAB Calendar

Jan. 19—Continental Air Lines rate case (Docket 934).

Jan. 20—Hearing on application of Alaska-Star Airlines for Board approval of its purchase of Cordova. (Docket 930).

Jan. 25—Hearing on American Airlines application to include San Antonio on its Mexico City route.

Feb. 1—Hearing on applications of Braniff, Chicago & Southern, Continental, American, Eastern & Delta for routes in the Oklahoma City area. (Docket 503 et al).

Feb. 28—Hearing on applications for service Milwaukee, Chicago and New York. (Docket 629). (Tentative).

April 1—Hearing on applications involving service between New Orleans and Kansas City. (Docket 651 et al). (Tenative).

April 1—Hearing on applications involving service to Joplin, Tulsa and Oklahoma City. (Docket 413). (Tenative).

May 15—Hearing on Latin America-Caribbean applications. (Docket 525 et al).

Background on U. S.-Canada Agreement

The U. S. and Canada are operating under the terms of Article III of the Air Transport Arrangement made between the two governments concluded on Aug. 18, 1939. When this Arrangement expired Dec. 31, 1942, the two governments took steps to extend the agreement, which was done on March 4, 1943 until the end of the war. The only material change in the agreement extends from 60 days to eight months the period by which either party can terminate the agreement. The new agreement provides that notice of intent to terminate the agreement may not be given until a period of 60 days for consultations has expired. Either party can terminate the agreement six months after the expiration of the consultation period. The agreement also provides for a conference between the two governments for the purpose of reviewing the situation at the close of the war.

For the next 20 seconds, the pilot's name is Elmer!

APPROXIMATELY 20 nervous seconds elapse between the time a bomber goes into its final run and the time it pulls out and heads for home.

During these vital 20 seconds, which determine whether the mission succeeds or fails, the pilot of this bomber is a machine—the Sperry Gyropilot.* He's "Elmer" to the U. S. bomber crews—"George" to the fliers of the R.A.F.

Why is the plane turned over to Elmer? Because Elmer provides the precision control necessary to maneuver the airplane correctly during the bombing run.

Elmer holds the ship steadier—truer—than any man can do. His errorless control is one of the big reasons for the accuracy of American precision bombing.

Elmer not only does this but, going to and from the target, he can hold the big ships in level flight and on their course with no hand on the controls.

Naturally, a device like this is not created overnight. Sperry developed the first automatic pilot before the last war. It was designed to increase safety in flight. Pioneering and development work continued. In 1933, Wiley Post flew around the world alone with the aid of a Sperry Gyropilot.

Post's epochal flight furnished spectacular proof that Elmer was practical. Sperry Gyropilots were soon standard equipment on transport planes the world over. When World War II came, still further improvements had been made to give Elmer the precision needed for bombing missions.

Improvements are still being made. When the war is over, Elmer, along with many other Sperry devices developed for peace and adapted to war, will return to the work for which he was originally designed.

With more than 30 years of development behind him, Elmer, the Sperry Gyropilot, will be well-equipped to serve tomorrow's world-wide airlines.

American bombers are now being equipped with the new Sperry Gyrotronic* *Pilot, a precision, electronic version of the Gyropilot.**

*Trademarks Registered

SPERRY

GYROSCOPE COMPANY, INC.

Brooklyn, New York

Division of the Sperry Corporation

Examiners Favor Merger of Western, Inland Air Lines

Purchase Price Trimmed $19,000 Report Discloses

ANOTHER MERGER of two airlines—Western Air Lines, Inc. purchase of Inland Air Lines, Inc.—appeared on its way last fortnight to a successful consummation.

The acquisition received the favorable recommendation of CAB Examiners Thomas L. Wrenn and Barron Fredricks Dec. 30 when they filed their report with the Civil Aeronautics Board. The Board's final decision may be delayed until the Air Line Pilot's Association can file an agreement determining the seniority rights of the pilots of both carriers.

Because of adjustments resulting from an inventory of Inland's physical assets, the price which Western will pay for the purchase of 137,241 shares of Inland stock is $347,219 or $2.53 per share, the examiners' report revealed. This sum, the report stated, is $19,905 less than the amount originally agreed upon when $2.65 was the stipulated price per share. If Western is successful in buying the remaining 17% of the stock which is outstanding at this same figure, the total financial consideration involved in the purchase would amount to $415,471.

In recommending approval, Examiners Wrenn and Fredricks stated:

". . . there is nothing in the record which would lead to a conclusion that this proposal will result in creating a monopoly, or will restrain competition or jeopardize another carrier. The two systems join at Great Falls; they serve different areas and are not competitive with each other so that the general public will not be subjected to less air service than at the present nor subjected to monopoly through the elimination of competitive service. The sole remaining consideration is whether the proposed acquisition is consistent with the public interest. In determining this question in the present case the principal issue is with respect to the reasonableness of the purchase price."

The examiners further stated: "The net book value of Inland was computed as approximately $296,000. If Western's valuation of leases held by Inland and appreciation of equipment, totaling $138,000, be accepted, then the value of Inland's assets exceeds the purchase price. The value which Western attaches to the equipment is based upon present market values. Public Counsel contends that the revaluation of equipment to reflect present market values is contrary to sound accounting practice. While this contention is correct, it must be recognized that Western is purchasing assets of Inland which could be disposed of in a liquidation of that company at current market prices."

Under the terms of the sales agreement, Western will pay salaries to Richard Leferink and Marvin W. Landes, Inland officials, amounting to $43,000 for a 2½ year period, unless they voluntarily discontinue their employment with Western. The report disclosed that Western intends to employ Landes in its operating department and that Leferink will assist in working out details and policies with reference to the merger.

"While the record is convincing that Landes will become a part of Western's operating department, it does not show that Leferink will perform services commensurate with the $25,000 to which he will be entitled," the report stated. "It would therefore appear that at least a part of the latter amount constituted some consideration for the sale. However, even if the total amount be considered a part of the purchase price the ratio of purchase price to net book value would not be substantially increased."

The examiners, in support of their findings, point out that in the case of TWA's purchase of Marquette Airlines, approval was given when the ratio of purchase price to book value was 6 to 1. Similarly, in 1943, the examiners point to the Board's approval of United Air Line Corporation's purchase of 75% of the stock of LAMSA when the ratio between purchase price and book value was 4½ to 1. In the instant case, the ratio of purchase price to net book value is approximately 3 to 2, the examiners stated.

The examiners concluded that the purchase price is not so far in excess of the net book value of the property acquired as to be unreasonable. They also mentioned the goodwill which Inland had developed during a considerable period of successful operation in a sparsely-settled territory.

ALPA Requests CAB Defer Decision On Western-Inland Deal

The Civil Aeronautics Board has been asked to defer its decision with reference to Western Air Line's acquisition of the control of Inland Air Lines, Inc., until an agreement can be worked out between the pilots of both lines as to their seniority classifications under Western's new operating set-up. Board examiners have recommended approval of the acquisition.

The request was filed with the Board last month by John M. Dickerman, attorney for the Air Line Pilots Association—the bargaining agency.

Dickerman stated that both airline companies had the following agreement with their pilots concerning seniority: "Seniority as a pilot shall be based upon the length of service as an airline pilot with the company or its predecessors or companies whose business is taken over by the company."

It is claimed by Dickerman that prior to the filing by Western of the application asking Board approval of its acquisition of Inland, the Air Line Pilots Association was not advised or consulted nor was any attempt made to adjust and agree upon the merging of pilot personnel of the two airlines in accordance with the written agreements.

A letter which L. H. Dwerlkotte, vice president of Western sent to the president of Inland was quoted by Dickerman as having stated: "In the event the CAB approves Western's purchase of Inland's stock majority, Western will take over all employes then on the payroll. The period of their employment shall be determined entirely by the quality of their service, ability and policies that sound management may require should be followed."

Dickerman set forth further that Dwerlkotte, at the hearing on the acquisition case, stated Western intended to abide by all of the provisions of the employment agreement in effect with Inland's emploves. and that any differences could probably be worked out by the employes themselves.

Whyatt President of New Clearing House

E. I. Whyatt of St. Paul, vice president and treasurer of Northwest Airlines, last fortnight was elected president of the recently formed Airlines Clearing House, Inc., which has headquarters at 173 West Madison Street, Chicago, to expedite passenger revenue accounting in the U. S. and Canada.

Whyatt was first president of the Airlines Finance and Accounting Conference, affiliated with the Air Transport Association, which drafted plans for the organization. He will remain with Northwest.

Lowell N. Harter of Chicago has been named vice president and general manager, and E. F. Kelly is secretary. Harter was formerly with International Business Machines, and Kelly is secretary of the Finance and Accounting Conference.

Named to the board of directors were: V. J. Long, assistant treasurer, American Airlines; George Fleming, auditor of revenues, United; G. O. Thornley, auditor, TWA; T. F. Armstrong, secretary-treasurer, Eastern; L. B. Judd, controller, Delta; and C. S. Adams, Secretary-treasurer, Braniff.

RYAN-STANDARD cabin plane; pioneer passenger airliner.

RYAN BROUGHAM, widely used commercially and for many famous flights.

RYAN S-C, cabin plane for private-owner use, featured all-metal construction.

RYAN YO-51 "Dragonfly", Army observation plane with unique performance ability.

RYAN NR-1, low-wing trainer used for formation flight instruction by Navy.

RYAN ST3-S, seaplane trainer of same series as Army's PT-22.

RYAN PT-25, superbly engineered plastic-bonded plywood trainer.

Why the Score was 93 to 6

The report on that recent amazing air battle, when 93 Japanese planes in the South Pacific were destroyed in the air with a loss of only 6 American aircraft, has been confirmed and made official.

The analysis of military experts gave much credit to the superior fire power and armament of the American planes. But they all came to one conclusion: That the American pilots were better because they were *better trained.* To *this* they gave most of the credit.

Close to the heart of every member of the Ryan manufacturing and training organizations are the thousands of combat pilots—trained in Ryan *planes* and by the Ryan *schools*—who are now fighting on every front. Seventeen years' experience training commercial pilots and four years training military flyers has enabled the Ryan School of Aeronautics to play an important part in giving America the better trained pilots, whose superiority is attested by outstanding combat records and hundreds of decorations for aerial skill.

For years Ryan training has been based on *thoroughness* and *exactness.* Now entirely devoted to training military pilots, Ryan Schools in peacetime will continue to be dedicated to the same high standards.

RYAN SCHOOL OF AERONAUTICS, operating bases; Hemet, Calif., Tucson, Ariz.

RYAN

Rely on Ryan to Build Well

RYAN BUILDS WELL

Ryan construction, proven in aviation's pioneer days, now proven in war, will tomorrow produce safer, more useful peacetime aircraft.

RYAN TRAINS WELL

Ryan School of Aeronautics, famous peacetime air school, now training fine U.S. Army pilots, follows one creed: **Thoroughness.**

RYAN PLANS WELL

Modern engineering + flying experience. Typical result: Ryan exhaust manifold systems are now used on the finest planes of other manufacturers.

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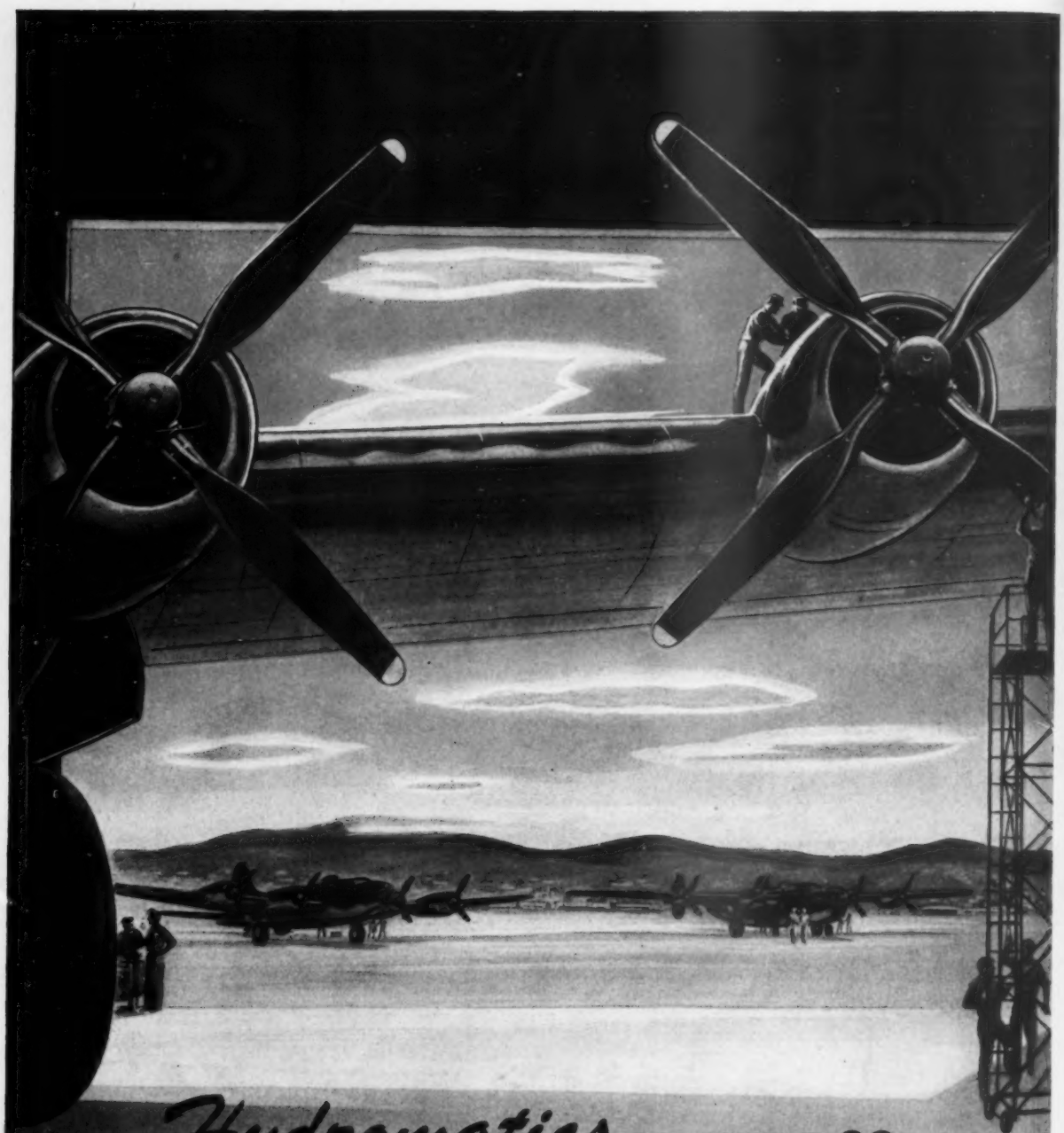


Hydromatics ON THE B-29

Dwarfing today's mightiest warplanes is the recently announced Boeing B-29 superbomber. Like the long-range Liberator and Flying Fortress bombers already in combat, it is equipped with four dependable Hamilton Standard Hydromatics. The B-29 propellers are built under license by Frigidaire.

HAMILTON STANDARD PROPELLERS

EAST HARTFORD, CONNECTICUT

ONE OF THE FOUR DIVISIONS OF UNITED AIRCRAFT CORPORATION

(This illustration does not attempt to portray the B-29)

Continental Air Lines Favored for Salina-Hutchinson Route

THE RELATIVE POSITION of the so-called regional air carrier was strengthened somewhat during the last fortnight by a CAB examiner's report urging that new service in the Salina-Hutchinson, Kan., area be given to Continental Air Lines, Inc.

In his report, Examiner Lawrence J. Kosters recommended denial of applications of Braniff Airways, Inc. and Transcontinental & Western Air, Inc. for route extensions in the same area.

Continental now holds certificates between Denver and Kansas City and between Pueblo and Tulsa. The route between Salina and Hutchinson will connect these parallel routes and add 55 miles to its route mileage.

TWA sought an amendment to its Route 2 so as to include Topeka, Salina and Hutchinson as intermediate points between Kansas City and Wichita. Braniff asked an amendment to its Route 9 so as to include Topeka as an intermediate point between Kansas City and Wichita.

Upon the basis of estimates submitted by TWA inclusion of the stops requested would increase the time of presently operated schedules from 20 minutes in the case of Topeka to 1 hour and 17 minutes if all three points are served on one schedule, Kosters' report stated.

The report pointed out further that Braniff's proposal contemplated single carrier service to Topeka on flights operated between Chicago and Dallas, requiring 12 additional miles per trip and about 20 minutes additional elapsed time.

"Continental's various proposals envisage the operation by it of a connecting link between its routes 43 and 60 in order to place it in a position to provide local and direct single-company service between these points on its routes," the report stated. "To accomplish this end, it has requested authority to operate between Hutchinson, an intermediate point on route 43 and Salina, an intermediate point on route 60—a distance of 55 miles."

Kosters pointed out that Continental submitted a statement that the only additional cost which would incur in the proposed operation will be the direct flying expense of 55 miles between Salina and Hutchinson.

'Duplicating Service'

TWA's proposal, the report stated, would be a duplicating service and would result in a substantial diversion of revenue from Continental. Kosters also stated that the preference of the traveling public for a single-plane operation over a connecting service is well recognized as an argument against granting TWA's application, although he pointed out that TWA feels it must enter the local transport field to strengthen its economic position.

"As the Board recently pointed out, there is a limit to the extent to which transcontinental carriers should be permitted to divert their routes to include additional points of service, since such additions have a tendency to diminish the value of fast transcontinental service and tend to weaken, relatively, the economic and competitive position of the smaller local or regional carrier," the report emphasized. Kosters said that whatever the benefits which might accrue to TWA from obtaining these points, they would be outweighed by the detrimental effect upon the development of a sound air transport system. He concluded that Braniff's application differed from that of TWA only in the matter of degree indicating that if Braniff were permitted to operate to Topeka, it would be a duplicating service and one that might be expected to divert business from Continental.

Kosters pointed out that approval of Continental's application would result in the establishment of an alternate route between Denver, Wichita and Tulsa which would be 40 miles shorter than present routes.

Mentions Greyhound Memo

The examiner mentioned the memoranda filed by Greyhound Corp. of Chicago which asked the Board to postpone a decision in these applications for local service until they could be consolidated with other applications on file, that if certificates were granted to trunklines they be restricted to cover traffic moving a certain minimum distance or that only temporary certificates be granted.

"While the merit of Greyhound's position must be recognized it does not appear to be of particular force in the instant case," the report stated.

Kosters report gave comparative data on costs. He found that Continental's proposal could be inaugurated at considerably less expense than the others.

Croil Hunter Again Heads Northwest Airlines; Five Other Officials Renamed

Croil Hunter, president of Northwest Airlines since 1937, was reelected last fortnight at the annual meeting of the airlines' board of directors in St. Paul. E. I. Whyatt was reelected vice president and treasurer; K. R. Ferguson, vice president - operations; A. E. Floan, secretary; L. S. Holstad, assistant treasurer; and Camille L. Stein, assistant secretary.

Hunter

Hunter has been associated with NWA since 1932 as general traffic manager, general manager, and vice president, as well as president. Under his guidance the airline has grown to be the largest domestic airline in the nation in the number of employes (nearly 10,000, the company says. Northwest has a large expansion program in view.

Service to Vera Cruz

Compania Mexicana de Aviacion, Mexican affiliate of Pan American Airways, has inaugurated a new shuttle service between Vera Cruz and Tuxpan. Passengers traveling between Mexico City and Vera Cruz now have an alternative service to the direct daily flights between these two points since it makes connections in both directions with the daily CMA service between Mexico City and Tuxpan.

Not Kiddie Slide—Cargo Slide

This is no children's playground slide. It is a wooden cargo slide devised by American Airlines to simplify unloading problems. The unit fits snugly to the top of the standard loading platform.

Six Surface Carriers Ask Routes in 2-Week Period

TWENTY-TWO applications for new air services, six of them by truck or bus companies, were filed with the Civil Aeronautics Board during the period from Dec. 22 to Jan. 6 inclusive.

Three air carriers are among the number filing for new routes. One of these—All American Aviation, Inc.—asked that Washington be named a terminal on its Route 49 (F) in place of Philadelphia, due to the closing of the Philadelphia Municipal Airport. Eastern Air Lines, Inc. asked for new stops on its seaboard routes while Northwest Airlines, Inc. filed for extensions to its routes in the northwest part of the United States.

Technical Sergeant Joe Bill Ours, who has flown planes in crop dusting operations in southern states, filed in person an application for his company—Dixie Airways—asking for air transport routes in Mississippi and Tennessee.

A brief summary of the applications follow:

All American Aviation, Inc.

This carrier filed an application requesting permission to serve Washington, D. C. in lieu of the closing of the Philadelphia Airport. Applicant claims use of the Nation's Capital as an alternate terminal on its Route 49 (F) will enable such towns as Harrisburg, Carlisle, Shippensburg, Chambersburg, Gettysburg, Hanover, York, Columbia, Lancaster, West Chester, Wilmington and Philadelphia greatly improved airmail service because suspension of service at Philadelphia has deprived All American of an eastern terminal and of trunkline connections with the eastern seaboard air termini. (Docket 1251)

Associated Truck Lines

Through E. F. McClellan, vice president, of 2146 National Bank Building, Detroit (26), Mich., this truck company filed for four routes for air transport of property and mail between New York and Detroit, via Philadelphia, Pittsburgh and Cleveland; between Boston and Detroit, via Buffalo; Louisville and Detroit, via Cincinnati and Chicago; St. Louis and Chicago, via Kansas City, Minneapolis-St. Paul and Milwaukee. Company asks permission to serve a number of unlisted cities in Michigan on all routes. Helicopter and conventional type of aircraft would be used. (Docket 1267)

Baldwin Transportation Corp.

This applicant of 554 W. 38th St., N. Y., N. Y. has filed for air routes in unscheduled operations for transportation of cargo, goods, wares, merchandise of all kinds and mail between unlisted points in New York, New Jersey and Connecticut to all other states in the U. S. Lester Palmer Marasco is president of the company which is now engaged in common carrier operations. (Docket 1246)

Chicago and Calumet

Located at 4923 Columbia Avenue, Hammond, Ind., this bus company filed for helicopter routes from Chicago to points including Hammond, Whiting, East Chicago, Gary, Griffith in Indiana and Lansing, Calumet City and Burnham, in Illinois. (Docket 1262)

Clear Ridge Aviation, Inc.

This company located at 1502 City National Bank Building, Omaha, Neb., filed for passenger and airmail pickup routes in an area surrounding Omaha. On two of the proposed routes passengers would be carried with airmail pickup operations on two other routes. Oscar O. Cook, is president of the company which is capitalized at $100,000. (Docket 1265)

Cloud Airlines

Fred W. Cloud, P. O. Box 1181, Billings, Mont., asked for this company helicopter routes between any and all cities in Montana to designated points in Wyoming, South Dakota, North Dakota, Idaho, Utah, Washington and Oregon. Applicant now operates a freight carrier service in Montana and Minnesota. (Docket 1263) In another application Cloud Airlines asked for a certificate to operate a helicopter transportation service for carriage of property, passengers, baggage and mail between all cities, towns and stations in Montana, either in scheduled or charter operations. (Docket 1264)

Max Dach

Applicant of 43-36 167th St., Flushing, Long Island, N. Y., filed for a certificate to transport persons, mail, baggage and express in scheduled operations over 12 routes most of which would originate at Port Washington and serve the nearby areas. The applicant proposes to use helicopters. Permission also is sought to operate a charter service to and from any point on the proposed routes. (Docket 1250)

Direct Training Schools

Capt. E. A. Austen, left, of American Airlines, and Capt. Trow Sebree, of Pennsylvania-Central Airlines, meet at the opening of PCA's new Naval Transitional Training School at Roanoke, Va. They are the directors of the only two NTT schools operated by commercial airlines. Austen heads American's school at Forth Worth. Sebree is in charge of the PCA school.

Dixie Airways

This applicant of P. O. Box 2, Leland, Miss., by Technical Sergeant Joe Bill Ours, filed for two air routes in Mississippi and Tennessee, between the terminals Gulfport and Memphis, via 18 intermediate points of the two states. Applicant asks for a certificate to carry passengers, mail, express and freight and would use twin-engine Cessna's or simliar aircraft. Ours now operates the Dixie Airplane & Dusting Co., Leland, which has engaged in all phases of crop dusting. Washington representative of the applicant, to whom communications should be sent, is John Ours, 1400 C St., N. E. (Docket 1245)

Eastern Air Lines, Inc.

Eastern Air Lines, Inc. filed an application to amend its certificate for Routes 5 and 6 so as to include the following stops: Annapolis and Easton, Md.; Dover and Wilmington, Del.; Millville-Bridgeton-Vineland, Trenton, New Brunswick, Redbank-Long Branch-Asbury Park, N. J. Service of these points would add 299 miles to Eastern's route system. (Docket 1247) In another application, Eastern filed a request for an exemption order authorizing it to serve Winston Salem and Greensboro or Raleigh-Durham and Greensboro on the same flight. Such service is now prohibited by the provisions of Eastern's certificate for Route 5. (Docket 1244)

Gateway City Transfer Co., Inc.

This freight carrier of 2130 South Avenue, LaCrosse, Wis., asks for a certificate to transport by air all general commodities between Chicago and terminals Des Moines, Minneapolis-St. Paul, and St. Louis over seven routes. Applicant proposes to use conventional aircraft and gliders. Gateway is now engaged in the motor freight service. (Docket 1254)

R. E. Guerin Trucking Co., Inc.

This applicant 462 Grafton St., Worcester, Mass., filed for a number of routes in Massachusetts, Connecticut, Maine, Vermont, Rhode Island, New Hampshire and New York for transport of mail, passengers and property through use of helicopters and conventional aircraft. (Docket 1266)

Hawthorne Airways

Beverly E. Howard, president of this company of Orangeburg, S. C., filed for six routes for transport of mail and property through pick-up operations over an extensive area in Virginia, North and South Carolina. The terminal points on the routes are: Richmond, Norfolk, Rocky Mount, Greensboro, Charlotte, Spartanburg and Columbia and scores of intermediate points are listed. (Docket 1243)

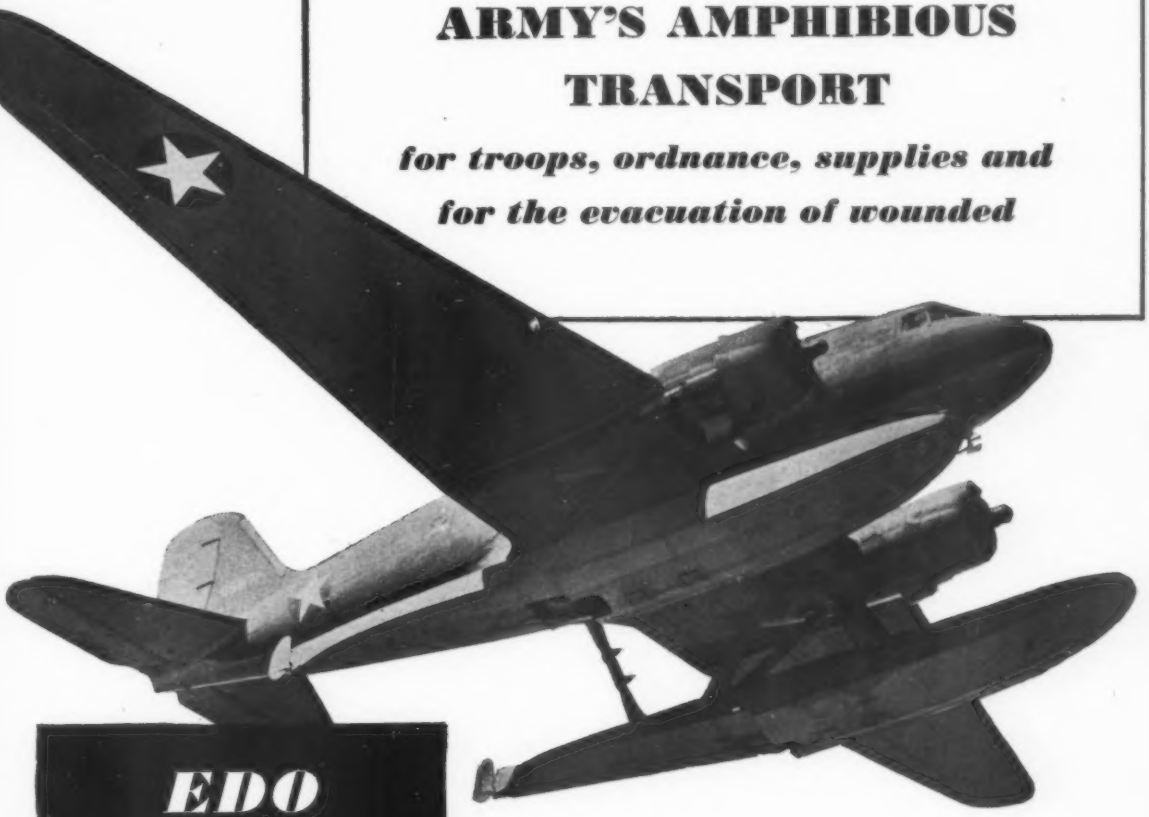
Interstate Busses Corp.

Applicant of 164 Memorial Ave., West Springfield, Mass., for seven air routes for transport of persons, mail, newspapers and express, via helicopters and other suitable aircraft, in Rhode Island, Massachusetts, Connecticut, New York, Vermont, New Hampshire, Pennsylvania, Maryland, New Jersey, and Washington, D. C. Applicant also asked for a certificate to engage in charter service between points and places within a radius of 25 miles of all points mentioned on the seven routes. Interstate is now a common carrier bus operator. (Docket 1252)

(Turn to page 66)

ARMY'S AMPHIBIOUS TRANSPORT

for troops, ordnance, supplies and for the evacuation of wounded



EDO AMPHIBIOUS FLOATS

with retractable wheels

built for the needs of AIR-SEA-LAND WARFARE

An Edo achievement—Developed by Edo engineers, these giant twin floats, equipped with retractable wheels for operation from beaches and landing fields, represent a notable war-time advance in the design of seaplane float gear.

EDO AIRCRAFT CORPORATION, 407 SECOND STREET, COLLEGE POINT, L. I., N. Y.

Photographs show the Douglas C-47 "Skytrain" on Edo Model 78 Amphibious Float Gear.

★ EDO FLOAT GEAR ★

SERVES THE UNITED NATIONS

Women in Air Transport

(This is the eighth of a series of articles on women who are doing an outstanding but little publicized job for the U. S. airlines.)

CATHERINE FITZGERALD boasts an enviable record in aviation. Relatively few men, to say nothing of women, have been in the industry for 18 years.

"Miss Fitz," as she is affectionately known to her hundreds of friends in aviation, started out 18 years ago as secretary to C. E. Woolman, vice president and general manager of Delta Air Lines. She is still his right-hand assistant, but her responsibilities have broadened with the growth of aviation and Delta, and she now occupies the position of assistant treasurer of the company, in addition to her secretarial duties.

When she joined Delta in 1926, the company had not yet inaugurated passenger service, but was engaged solely in crop-dusting operations. The company's first passenger and mail route was started in South America in 1928, from Peru to Ecuador, and its first domestic line was inaugurated in 1929 across the "deep south."

Miss FitzGerald came to Delta after earlier aviation experience with Huff Daland Co., designers of aircraft for the Army and the Navy.

"She's not just another woman in aviation—she's an institution in the industry," says James Cobb, Delta's publicity director, commenting on Miss FitzGerald's long career.

Deegan, Francis Join ATA Advertising Committee In New York Under Col. Hart

Thomas Deegan and Devon Francis, both former newspaper men, have become associated in an advisory capacity with Col. Charles Spencer Hart, who has established an office of public information in New York for the Joint National Advertising Committee of the Air Transport Association of America.

Deegan, for several years a reporter-writer for the *New York Times*, has had wide experience in public relations work. Francis, former aviation editor of the Associated Press, until recently was assistant to the director of public relations of Pan American Airways.

Airline Commentary

Letters continue to come in on the subject of articles left on airplanes . . . Here's a good one from Virgil Cory of TWA who says that ". . . I think the best is the many pajama bottoms found on flights when we had sleeper planes. Seems that most men don't like to sleep in the bottoms and they were found frequently, still folded up, in berths. And then there were the bed pans found on planes in the old days when people didn't know whether we had modern facilities and didn't want to take a chance. . ." What next?

●

One airline's public relations department has really been in the throes of changing personnel . . . The normal office staff consists of 18 persons . . . In a recent 14-month period there were no less than 24 persons resigned or discharged . . .

●

We've always maintained that one of the outstanding jobs of the war is being done by the U. S. airlines, both domestic and international, and that they haven't received enough credit for their work . . . So we asked a high War Dept. official the other day what he thought of the airlines' part in the war . . . And it was gratifying to hear that he had nothing but praise for their job . . . So all you people can rest assured that your war job is appreciated by the people who have a part in making the decisions . . .

●

It seems strange to us, but there doesn't seem to be a pilot shortage . . . Somehow, and we don't quite know how, we seem to have become somewhat of an "employment agency" for pilots . . . In the past several weeks we've had about half a dozen captains or co-pilots come in here for help in getting jobs . . . Most of them had trans-oceanic experience on four-engined airplanes . . . Luckily we've been able to be of some help, but all the boys reported that the job seeking isn't as easy as it used to be . . .

●

This is to acknowledge receipt of several letters on our recent remarks about the need for more delicate handling when it becomes necessary to remove non-priority passengers from airplanes . . . Several people have also told us verbally that the situation needs improvement . . . And improvement is being noted in many places . . . For instance, Western Air Lines received a letter from a passenger who had been removed, stating, "You will be interested to know that your employes were most courteous in their handling of the matter. There was no attempt at arrogance—in fact, I couldn't criticize a thing they did, so—congratulations to you and to them" . . . It's a tough job to indoctrinate new personnel, and the airline traffic officials deserve a vote of thanks for the job they are doing under difficult circumstances . . .

●

If is wasn't for the fact that we've mentioned TWA's clever cartoonist, Eldon Frye, so many times in this column, and if we weren't afraid of being accused of favoritism, we'd write something about the swell job he did in a new pamphlet entitled "Telephone Types," which shows you how NOT to talk on the telephone, but inasmuch as we've mentioned him about 68 times, maybe we'd better forget the whole thing . . . And if you can read the above sentence in one breath we'll mention you, too . . .

●

L. Welch Pogue and Edward P. Warner have been reappointed chairman and vice chairman, respectively, of the Civil Aeronautics Board for 1944 . . . The entire industry, we believe, will approve the appointment of these two capable men who have served well in their jobs during the past year . . . Both of them have suffered illnesses caused mostly by overwork, but even this hasn't taught them a lesson . . . They're still in there pitching . . .

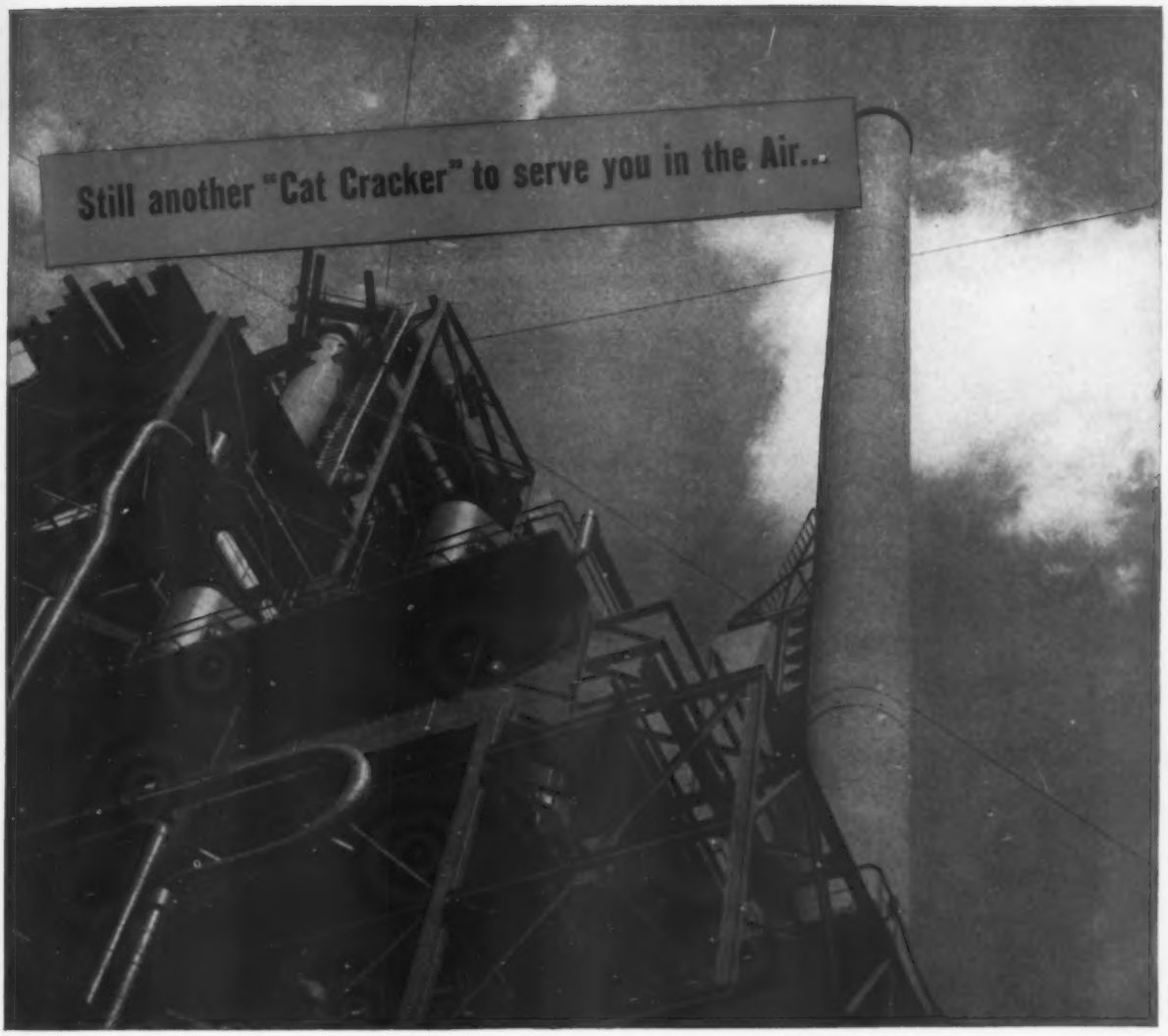
●

The Air Transport Command helped carry the air mail during the Christmas rush period, and the Post Office Dept. tells us that it was a big help . . . As stated elsewhere in this issue, the ATC toted some 80,000 lbs. of air mail, which isn't exactly peanuts . . . Partly because of ATC assistance (but also because the airlines did such a swell job) very little Christmas air mail went by train, except following weather cancellations . . .

●

Chris de Groot of Pan American-Grace Airways was telling us the other day about some of the commodities which Panagra has carried as wartime cargo . . . And it will make a good story when it can be told . . . Panagra is now using DC-2s and DC-3s to haul cargo and a couple of the latter have cargo bins installed and also have, of all things, strong boxes . . .

Eric Bramley



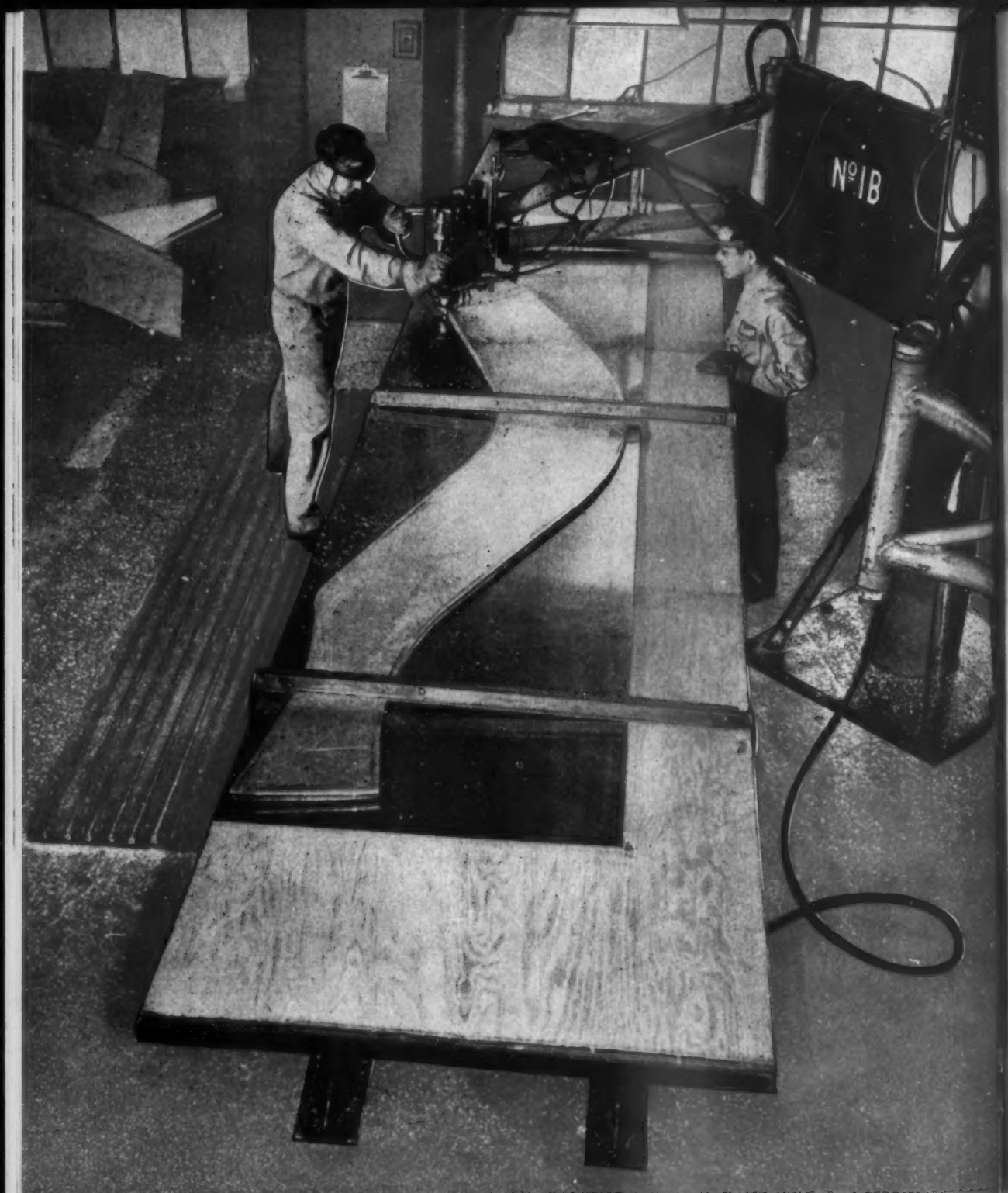
DEDICATED IN BALTIMORE, DECEMBER 1st TO HELP FUEL AMERICA'S WARPLANES... A FUTURE ASSET OF ALL WHO FLY.

It's a fluid catalytic cracking unit... something that grew out of a test tube and out of the minds of some of the people in our laboratories.

To the layman, it's just an aviation gasoline refinery, another industrial achievement to help shorten the war.

But to you... this unit is something you can use. Something you can count on in the post-war aviation plans you are making. From it and seven other Esso "cat crackers" will flow oceans of aviation gasoline which will be distributed in our territory anywhere, anytime, to meet your needs.

But what is perhaps even more important is this... the minds, the skills, the experience that made this and all other "cat crackers" will continue to be at your disposal anywhere in our territory at anytime, to meet your needs in post-war times.



REYNOLDS

SO YOU CAN SAVE MANPOWER

REYNOLDS OFFERS A COMPLETE SERVICE ON

FABRICATED PLANE PARTS . . .

BIGGEST WORRY of war manufacturers today is the problem of getting enough good help. In the airplane industry this situation is particularly acute. It would be worse, except for the fact that Reynolds is saving thousands of man-hours of airplane labor by supplying completely finished parts to *every* leading manufacturer of fighting planes.

Simple and obvious as this service seems today, it has been available for only three years. Reynolds pioneered it . . . built the organization needed to deliver it . . . was the *first* aluminum manufacturer to supply finished plane parts from aluminum sheet.

Every production man knows that the savings are substantial. Besides conserving scarce manpower and valuable floor space at the airplane plant, the Reynolds plan does away with needless handling and cross-shipping of scrap, averaging 30% of every sheet. And this scrap gets back into useful aluminum in three days instead of three months!

The Reynolds organization, now operating 40 plants in 14 states, has been built by this kind of progressive, co-operative thinking and planning. Reynolds men are constantly searching for new ways to make aluminum better, and make it easier and cheaper to use. If you have a problem of *any kind* in working with aluminum, you will find Reynolds has the resources, equipment, and engineering skill to help you solve it in the most practical way. Reynolds Metals Company, Louisville, Ky.

ALUMINUM SHEET of every type is available now at Reynolds, ready for quick fabrication into finished plane parts of any size and type. Save your own manpower and floor space for the final vital job of quick assembly.

THE GREAT NEW SOURCE OF

ALUMINUM

INGOT · SHEET · EXTRUSIONS · WIRE · ROD · BAR · FORGINGS · TUBING · FOIL · POWDER

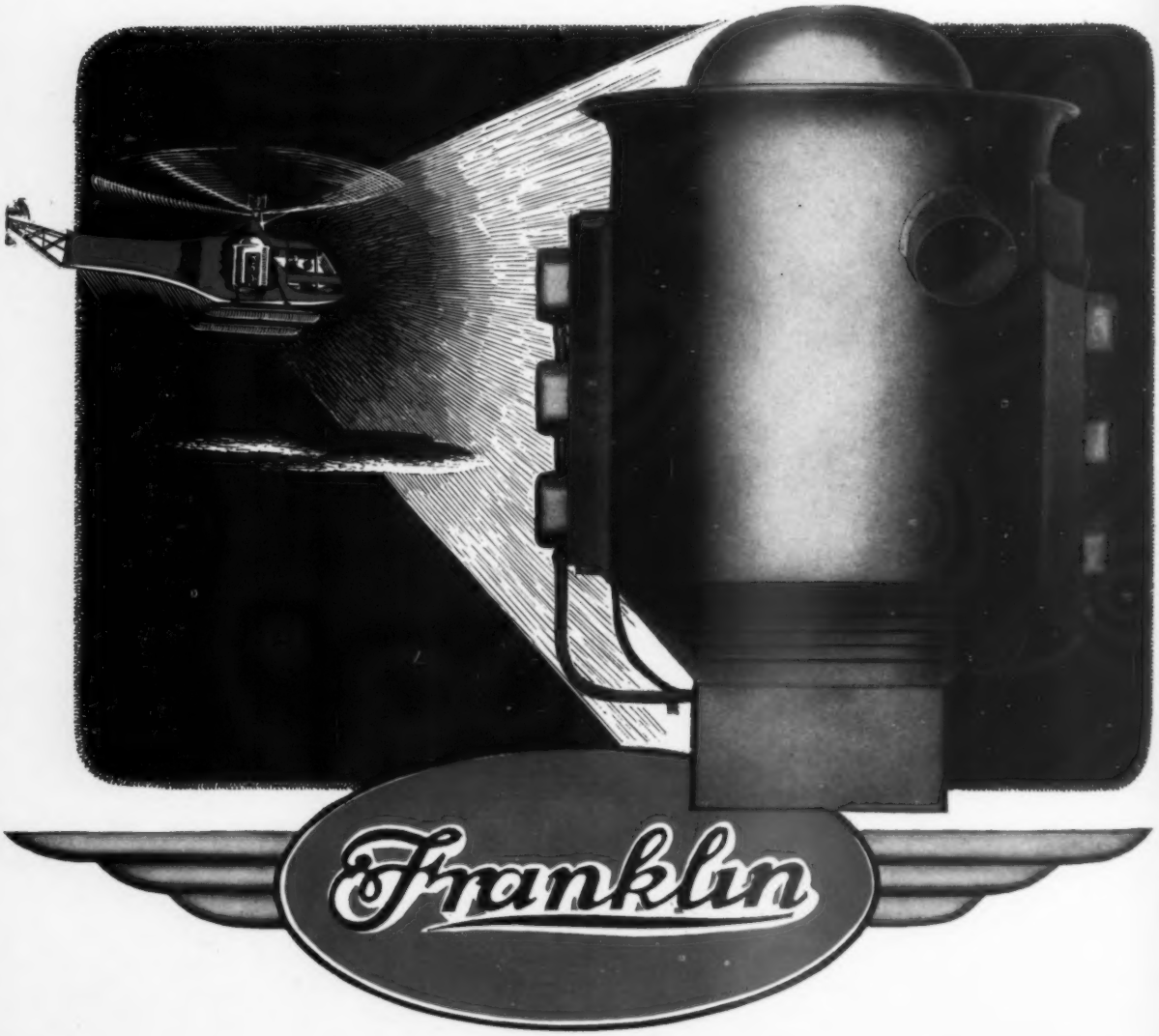
What's a HELICOPTER ENGINE look like?

THAT'S a question lots of people have been asking—and here you have one answer. For here for the first time is shown a Franklin aircraft engine designed to power post-war helicopters and already in use in several experimental installations.

It's been compared in appearance to a boiler or a diving bell, but actually it's a six cylinder, opposed, air-cooled engine. Fundamentally, it's very like a conventional Franklin engine, except that it is mounted vertically directly below the main rotor shaft, and almost completely covered by an air housing, which directs air for cooling over the engine from an engine-driven fan.

Aircooled Motors has been making Franklin helicopter engines for almost four years. It was a Franklin that powered the Sikorsky ship which broke the world's helicopter endurance record in 1941. It was a Franklin which powered the PV-2, latest helicopter to make a public demonstration flight. And Franklin engineers are working steadily to bring helicopter engines to ever-higher levels of performance, so they'll be ready to go into production quickly with efficient engines for your post-war helicopter.

AIRCOOLED MOTORS CORP. ★ SYRACUSE, N. Y.



CAB Orders New Evidence Taken In PAA's Pacific Mail Pay Rate

THE CIVIL AERONAUTICS Board recently issued an order enlarging the scope of reconsideration and permitting the inclusion of additional evidence in the air mail rate case involving the original application of Pan American Airways, Inc. for Board determination of a fair and reasonable rate of mail pay in operations between San Francisco and Auckland, New Zealand, and between Hong Kong and Singapore.

When the petition was filed originally, Pan American asked that a rate be established for the period July 1, 1940 to Dec. 13, 1941 over the San Francisco-Auckland route and between Nov. 1, 1940 and Dec. 13, 1941 over the route from San Francisco to the respective termini—the British Crown Colony of Hong Kong and Singapore and the Straits Settlements. The Board on Aug. 31, 1942 filed its opinion and order in the case. On Nov. 25, 1942 the Board decided to reopen the case.

Its most recent order stated:

"Public Counsel having, on Oct. 26, 1943, filed a motion to enlarge the scope of reconsideration and to make a part of the record in the proceeding certain evidence relating to the collection by the Post Office Department, for the account of Pan American Airways, Inc., of the postal accounts of Netherlands Indies and Malaya, for which accounts the Board in its opinion of Aug. 31, 1942, permitted, as an time of expense, a reserve against noncollection; and

"Pan American Airways, Inc., having, on Nov. 10, 1923, filed a memorandum in opposition to the motion of Public Counsel, and a motion for confidential treatment of said memorandum in opposition; and

"The Board, after due consideration of all the matters set forth in the motion of Public Counsel and the memorandum on behalf of Pan American Airways, Inc., in opposition to said motion, finding that the motion of Public Counsel contains sufficient grounds for the relief hereinafter granted, and that the Board's action in this matter is in the public interest and consistent with the provisions of the Civil Aeronautics Act of 1938, as amended;

"It Is Ordered: That the proceeding be and the same is reopened for the purpose of reconsideration of the amount of the reserve against non-collection of certain postal accounts, which was allowed as an item of expense in the opinion of the Board on Aug. 31, 1942; and

"It Is Further Ordered: That there be received in evidence as a part of the record in this proceeding the affidavit of George H. Grayson, Director of the Division of International Postal Service, United States Post Office Department, executed on the 26th day of Oct. 1943, attesting to the payment by Netherlands Indies and Malaya of the postal accounts for which the Board permitted a reserve to be established in its opinion of Aug. 31, 1942.

"It Is Further Ordered: That the memorandum on behalf of Pan American Airways, Inc., in opposition to the motion of Public Counsel be withheld from public disclosure until further order of the Board."

PAA Carried 16,000 Persons Across Atlantic in 1943

Four hundred and thirty flights were made by Pan American Airways across the Atlantic Ocean in 1943. Sixteen thousand passengers were carried a total of 2,276,000 miles, the company announced in a year-end statement. Europe, Africa, South America, and the United States were joined in the year's operations.

The PAA planes carried 832,086 pounds of mail. Air express totaled more than 4,131,000 pounds.

PAA, Panagra Fly 65,346,000 Miles During Year 1943

With a fleet of 150 aircraft in operation at the year's end, Pan American Airways and Pan American-Grace Airways, on the west coast of South America, had flown a total of 65,346,000 miles in 1943 as compared with 43,939,744 in 1942 and 24,875,941 in 1941, said a joint annual report of the companies last fortnight.

Passengers carried totaled 606,700, nearly double that of 1941. Passenger miles totaled 475,470,000, and 49,345,000 pounds of cargo were carried. The mail load of 14,465,400 pounds in 1943 was more than four times the 3,489,619 pounds carried in 1941.

Current PAA operations average 20 ocean crossings a day. More than 5,000 actual over-ocean crossings for the military and on its civil routes were recorded in 1943 by the airline.

During the year, PAA established New Orleans as a new international air gateway, with 12-hour service to the Canal Zone over the Gulf of Mexico to Yucatan and down the Central American Republics. The new service brings every city in the Mississippi Valley within 24 hours of the Canal Zone.

W. A. Straith Joins TACA Agency in New York City

William A. Straith, formerly assistant director of training of the Airlines War Training Institute, New York City, has been named general operations assistant of TACA Airways Agency, Inc., with headquarters in New York. He was for several years engaged in aviation pursuits in Canada, as chief pilot, instructor, and western divisional superintendent for Trans Canada Airlines, and also as superintendent of pilot training and dispatch for Canadian Pacific Air Lines, operating between Edmonton and Alaska. He was at one time a pilot on the Seattle division of Northwest Airlines.

Straith

Justice Dept. Gets CAB's Approval to Intervene in Hughes-TWA Controversy

The Department of Justice has been granted permission by the Civil Aeronautics Board to intervene in the proceedings based on the application of Hughes Tool Co. requesting Board approval of its control of Transcontinental & Western Air, Inc. The Department's petition to intervene was based on laws relating to monopolies.

Hughes Tool Co., of Houston, whose stock is wholly owned by Howard R. Hughes, filed with CAB Nov. 20th an application for approval by the Board, if such approval is deemed necessary, of its control of TWA. The application disclosed that Hughes Tool Co. owned, as of July 31, 1943, 440,050 shares of the capital stock of TWA, or 45.6% of a total of 965,083 shares outstanding on that date.

Starts All-Cargo Caribbean Service

This four-engined plane, shown being loaded with four tons of express packages, left Miami recently on Pan American Airways' inaugural all-cargo service in the Caribbean area. It flew 1,150 miles to Puerto Rico. To provide maximum capacity for war cargoes, 2,500 pounds of interior fittings were stripped from the plane.

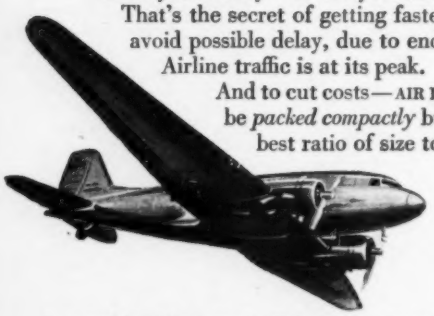
the secret of getting

FASTEST DELIVERY

DON'T wait for "routine" afternoon pickups, when shipping AIR EXPRESS. Get your shipments on the way as soon as they are ready—as early in the day as possible.

That's the secret of getting fastest delivery. Because you avoid possible delay, due to end-of-day congestion when Airline traffic is at its peak.

And to cut costs—AIR EXPRESS shipments should be *packed compactly* but securely, to obtain the best ratio of size to weight.



A Money-Saving, High-Speed Tool For Every Business

As a result of increased efficiency developed to meet wartime demands, rates have recently been reduced. Shippers nationwide are now saving an average of more than 10% on Air Express charges. And Air Express schedules are based on "hours", not days and weeks—with 3-mile-a-minute service direct to hundreds of U. S. cities and scores of foreign countries.

WRITE TODAY for "Vision Unlimited"—an informative booklet that will stimulate the thinking of every executive. Dept. PR-1, Railway Express Agency, 230 Park Avenue, New York 17, N. Y.

AIR EXPRESS

Gets there FIRST

Phone RAILWAY EXPRESS AGENCY, AIR EXPRESS DIVISION
Representing the AIRLINES of the United States

1943 Traffic Gains Reported by Airlines

Operating with about half of their pre-war flying equipment, the U. S. domestic airlines in 1943 showed gains of 10% in revenue passenger-miles, 34% in express ton-miles and 78% in mail ton-miles, Col. E. S. Gorrell, president of the Air Transport Association of America, reported last fortnight.

"Estimates indicate that revenue passenger-miles flown by the domestic airlines during 1943 will exceed 1,540,000,000, as compared with 1,398,042,146 in 1942 and 1,369,584,231 in 1941," he said. "In 1940 the domestic carriers flew 1,041,173,559 revenue passenger-miles, as against 677,672,955 the year previous.

"Express ton-miles flown in 1943 will exceed 15,774,000. This compares with 11,717,605 ton-miles in 1942, 5,242,529 in 1941, 3,469,485 in 1940, and 2,705,614 in 1939.

"Mail ton-miles flown in 1943 will total more than 37,639,000, a sharp increase over the 21,066,627 mail ton-miles in 1942. In 1941 mail ton-miles aggregated 12,900,405, while in 1940 and 1939 the totals were 10,035,638 and 8,584,891, respectively.

"These statistics describe only commercial operations at home. They do not tell the military operations of the commercial carriers at home and abroad. The complete account of the wartime operations of the air transport industry must await the end of the conflict. Only then can the details of the records of battle-front achievements be told . . .

"The 5,782 passengers carried by the domestic airlines in 1926 reached a peak in 1941 of 4,060,545 passengers. The number dropped to 3,551,833 in 1942 because the airlines turned over more than half their equipment for strictly military duties and, in consequence, the necessity of eliminating certain routes and stops after consideration and recommendation by the Civil Aeronautics Board reduced the number of short-haul passengers and occasioned an increase in the average length of haul. This year the number of passengers will exceed 3,105.000. The average passenger trip jumped from 224 miles in 1930 to 417 miles in 1942 and 485 miles in 1943, while the average passenger fare per mile dropped from 12 cents per mile in 1926 to 5.3 cents a mile in 1942 . . .

"In 1931 revenues totaled $24,090,000, of which 82.5 per cent was from mail, 17.2 per cent from passengers, and 0.3 per cent from express. By 1942 revenues had climbed to $112,396,000, of which 72 per cent came from passengers, 21.8 per cent from mail, and 6.2 per cent from express.

"The current operating records of the commercial air carriers are being made possible only through the complete utilization of all their resources, and their 'Know-How' derived from years of experience in air transportation. The airplane is averaging better than 1800 miles daily, as compared with around 1100 miles in the pre-war period. The revenue passenger load factor this year will be about 91.40 as compared with 72.15 in 1942, 59.13 in 1941, 57.93 in 1940, and 56.10 in 1939."

TRANS-CANADA AIR LINES carried 116,696 passengers in the first 10 months of 1943. Mail totaled 3,021,771 pounds; express, 656,877 pounds.

One of a Thousand

This chap is an experienced pilot.

He's a flight instructor in basic, advanced and twin-engined type aircraft . . . . . one of a thousand-odd trained employees of Aviation Enterprises Ltd.

He's an important part of a backlog of skilled personnel with which this organization is prepared to meet the post-war's onrush of needs in aviation transportation, maintenance and supply.

But today, Aviation Enterprises' business is the business of United Nations' victory—Tomorrow, the business of public service, in the progressive trend of world peace.

Aviation Enterprises Ltd.

FLIGHT AND OVERHAUL CONTRACTORS TO THE U. S. ARMY AIR FORCE

MUNICIPAL AIRPORT
HOUSTON

AVENGER FIELD
SWEETWATER

Complete List of CAB Certificate Holders, Applicants

(Following is a complete list of all holders of CAB certificates of convenience and necessity, and of all applicants for such certificates. Alaskan carriers and non-scheduled "grandfather" applicants are not included. Present certificate holders are marked with an asterisk.)

Aero Pickup Service Corp., P. O. Box 1298, Burlington, North Carolina
Aerovias Nacionales Puerto Rico, Inc., Terraza del Parque 15, Santurce, Puerto Rico
Aircar Service Company, 705 Plaza Building, Pittsburgh, Pennsylvania
Aircraft Sales Company, Municipal Airport, Fort Worth, Texas
Airdrome Transport, P. O. Box 508, Burbank, California
Air Transport Corporation, 216 North Second Street, Richmond 8, Virginia
Air Transportation Company, 281 Tompkins Avenue, Brooklyn, New York
Airway Motor Coach Lines, Inc., 501 First National Bank Bldg., Salt Lake City, Utah
*All American Aviation, 210 Greenhill Avenue, Wilmington 99, Delaware
All States Freight, Inc., 1142 Newton Street, Akron, Ohio
All Virginias Air Feeder Lines, 800 American Building, Washington 4, D. C,
*American Airlines, Inc., 100 E. 42d Street, New York 17, New York
*American Export Airlines, Inc., 25 Broadway, New York 4, New York
Arkansas Motor Coaches, Ltd., Inc., 433 W. Washington St., North Little Rock, Arkansas
Arkansas Valley Airlines, P. O. Box 549, Van Buren, Arkansas
Asbury Park-New York Transit Corp., Bus Terminal, Broadway, Keyport, New Jersey
Automatic Air Mail, Inc., Lost Nation, Iowa
Automobile Air Freight Corporation, Foot of Bates Street, Detroit, Michigan
Aviation Enterprises, Ltd., Houston Municipal Airport, Houston, Texas
Baldwin Transportation Corporation, 554 West 38th Street, New York, New York
Beach Motor Transit Company, 36 Riverside Avenue, Jacksonville 4, Florida
Belt Aviation, Inc., 135 So. LaSalle Street, Suite 1525, Chicago, Illinois
Bern, Edward G., 18 Carlton Road, Great Neck, Long Island, New York
Big Horn Airways, c/o Sheridan County Airport, Sheridan, Wyoming
Blue Line, The, 147 Pineywoods Avenue, Springfield, Massachusetts
Blue Ridge Air Lines, Inc., Hartman Airport, Harrisonburg, Virginia
Blue Ridge Lines, Inc., 55 East Washington Street, Hagerstown, Maryland
Bos Air Cargo, Marshalltown, Iowa
Boston, Worcester & New York St., Ry. Co., Framingham, Massachusetts
Bowen Airways, 521 E. Lancaster, Fort Worth, Texas
Bowen, Henry G., 280 Main Street, Fitchburg, Massachusetts
Bowman, F. X., 301 East Main Street, Girard, Pennsylvania
Brady Transfer & Storage Co., 16th at Central Avenue, Fort Dodge, Iowa
*Braniff Airways, Inc., Love Field, Dallas 9, Texas
Burke, Andrew J., Santa Maria, California (moved—no forwarding address)
Burlington Transportation Company, 547 W. Jackson Blvd., Chicago, Illinois
Cambridge Taxi Company, 2 Bay Street, Cambridge, Massachusetts
Carolina Air Lines, Inc., National Bank Bldg., Wilson, North Carolina
Carolina Airways, Paragon Building, Morehead City, North Carolina
Carolina Scenic Coach Lines, 217 N. Converse Street, Spartanburg, South Carolina
*Caribbean-Atlantic Airlines, Inc., P. O. Box 3214, San Juan, Puerto Rico
Catalina Air Transport, Catalina Airport, Avalon, California
Central States Aviation, Sioux City, Iowa
Century Aviation Company, Wayne, Nebraska
Chalfant, Read Quenton, 39 Dinsmore Avenue, Crafton, Pittsburgh, Pennsylvania
Checker Taxi Company, 10 Gainsborough St., Boston, Massachusetts
Chesapeake Airline, c/o Carl F. Eck, 12 Edgehill Drive, Alexandria, Virginia
Chicago and Calumet District Transit Co., Inc., 4923 Columbia Ave., Hammond, Lake Co., Indiana
*Chicago and Southern Air Lines, Inc., Municipal Airport, Memphis, Tennessee
Chicago, Black Hills and Western Air Lines, Rapid City, South Dakota
Clevinger, Landon L., Warsaw and Windsor Streets, Centralia, Washington
Cloud Airlines, P. O. Box 1181, Billings, Montana
Coast Aviation Corporation, Eagle Field, Dos Palos, California
Coastal Tank Lines, Inc., Grantly Road, York, Pennsylvania
*Colonial Airlines, Inc., 630 Fifth Avenue, New York, New York
Colorado Airways, Durango, Colorado
Consolidated Bus Lines, Inc., 2004 Princeton Avenue, Bluefield, West Virginia
*Continental Air Lines, Inc., Municipal Air Terminal, Denver, Colorado
Countryman and Mac Donald, Jr., 1014 South Michigan Avenue, Chicago 5, Illinois
Courier Express, Inc., First and Melborne Streets, Logansport, Indiana
Crary, Bruce L., 2320 Riverside Drive, Jackson, Mississippi
Dach, Max, 43-36 167th St., Flushing, Long Island, New York
*Delta Air Corporation, Municipal Airport, Atlanta, Georgia
Denco Bus Lines, Inc., Ada, Oklahoma
Denver, Chicago Trucking Co., Inc., 2501 Blake Street, Denver, Colorado
Denver and Rio Grande Western R. R. Co., The, Trustees, 1531 Stout Street, Denver, Colorado
Des Moines Flying Service, P. O. Box 712, Des Moines, Iowa
Dillner, W. J. Transfer Company, 601 Melwood Street, Pittsburgh, Pennsylvania
Dixie Air Transport Co., Inc., P. O. Box 2212, Baton Rouge, Louisiana
Dixie Airways, c/o John Ours, 1400 C. Street, N. E., Washington, D.C.
Dixie Motor Coach Corporation, 2805 Logan Street, Dallas 1, Texas
Duncan Air Transport, P. O. Box 30, Duncan, Oklahoma
Eagle Airlines, Inc., Missouri Pacific Building, 13th and Olive Streets, St. Louis, Missouri
Engel Air Feeder Lines, P. O. Box 697, Escondido, California
*Eastern Air Lines, Inc., 10 Rockefeller Plaza, New York 20, New York
*Essair, Inc., Republic Bank Bldg., Dallas, Texas
Filene's, Wm. Sons Company, Boston, Massachusetts
Florida Motor Lines, Corporation, P. O. Box 329, Jacksonville, Florida
Freight-Flite, Inc., First National Bank Bldg., Baltimore, Maryland
Frisco Transportation Company, 906 Olive St., St. Louis, Missouri
Fulwood, Walter S., and Roquemore, Clyde, McAllen Municipal Airport, McAllen, Texas
Gateway City Transfer Co., Inc., 2130 South Avenue, LaCrosse, Wisconsin
Gilbertville Trucking Company, Inc., Hardwick Road, Gilbertville, Massachusetts
Gillespie Airways, Ninth Avenue, North and Cumberland River, Nashville, Tennessee
Glose, Arthur W., 224 North Eighth Street, Allentown, Pennsylvania
Gordons North South Air Lines, Inc., 1407 Sterick Building, Memphis, Tennessee
Grace Line, Inc., 10 Hanover Square, New York 5, New York
Great Lakes Air Transport, Inc., 223 Erie Street, Buffalo, New York
Great Lakes Storage and Moving Company, 6904 Wade Park Avenue, Cleveland, Ohio
Greyhound Corporation, The, 2600 Board of Trade Building, Chicago, Illinois
Hann, Wm. Edward, 7-141 General Motors Building, Detroit, Michigan
Hannaford Aircraft Company, 1604 Pioneer Building, St. Paul, Minnesota
Hansen, Floyd D., Hansen Flying Service, Logan, Utah
Harris, Miss Angeline, 827 N. Washington Street, Rutherfordton, North Carolina
*Hawaiian Airlines, Ltd., P. O. Box 3287, Honolulu, Hawaii
Hawthorne Airways, Inc., Orangeburg, South Carolina
Heiser, Arthur J., 10 Hawthorne Avenue, Floral Park, Long Island, New York
Hughes Tool Company, Gulf Building, Houston, Texas
Humboldt Air Lines, 144 Humboldt Avenue, Boston, Massachusetts
Indiana Motor Bus Company, 109 N. Center Street, Plymouth, Indiana
Indianapolis Railways, Inc., 900 Traction Terminal Building, Indianapolis, Indiana
*Inland Air Lines, Inc., P. O. Box 1811, Casper, Wyoming
International Airways, Inc., Pier 34, North River, New York, New York
Interstate Airlines, Inc., P. O. Box 536, Twin Falls, Idaho
Interstate Busses Corporation, West Springfield, Massachusetts
Interstate Transit Lines, 2116 Leavenworth Street, Omaha, Nebraska
Iowa Airplane Co., Inc., Municipal Airport, Des Moines, Iowa
Jackson, Jackson & Drapela, Co-Partners, 204 South 7th Street, Grand Junction, Colorado
Johnston, Leland Perks, U. S. Naval Attache, Ciudad Trujillo, Dominican Republic
Kansas Aviation Company, Municipal Airport, Manhattan, Kansas
Kansas City Southern Transport Co., Inc., 114 W. 11th Street, Kansas City, Mo.
Kaufmann & Baer Company, Pittsburgh, Pennsylvania
Keeshin Air Freight, Inc., 221 W. Roosevelt Road, Chicago, Illinois
Kentucky-Tennessee Airlines, Radio Building, Lexington 9, Kentucky
Knowles Vans, Inc., 913 Davenport Street, Omaha, Nebraska
Land and Water Air Service, c/o Russell V. Trader, County Airport, Mifflin Twp., Pittsburgh, Pennsylvania
LeFors Brothers, P. O. Box 1734, Phoenix, Arizona
Lincoln Air Lines, Inc., 201 West 41st Street, New York, New York
Logan Williamson Bus Company, Logan, West Virginia
Magann, Frank P., Belmont, Massachusetts
Magnolia Airways, c/o C. M. Foester, Magnolia Beach, Texas
Marion Trucking Company, Inc., 1620 Factory Avenue, Marion, Indiana
Massey and Ransom Flying Service, Inc., Colorado State College Airport, Ft. Collins, Colorado
Matson Navigation Co., 215 Market St., San Francisco 5, California
*Mayflower Airlines, Inc., Room 3, 311 Main Street, Worcester 8, Massachusetts
Mercury Development Corporation, c/o Robert W. Lyons, 1100 Bowen Building, Washington, D. C.

(Turn to page 64)

Keeping BOOST ON THE BUTTON!

The Simmonds-Hobson Automatic Engine Control

TAKE-OFF calls for split-second coordination of airplane, propeller, and engine controls. Climb at rated power... flight at cruising... all mean continuous adjustments of mixture, RPM, and manifold pressure which complicate a pilot's job.

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Mexican Aviation Industry Abreast of National Boom

By PEGGY GUETTER

(American Aviation's West Coast representative has just returned from a two-weeks' visit in Mexico)

MEXICO IS BOOMING and so is its airline industry.

On one hand, you see for yourself the nation's busy airports with passengers and express destined domestically and internationally—a vital, established fact. On the other hand, you hear speculation and rumor of pending big deals—a characteristic trend for a boom country and an expanding industry.

This second phase makes conversation in hotel lobbies as well as discussion for "hangar flying" sessions. Several people prominent in American aviation circles are reported raising money to buy three Mexican lines.

There is interest in Comunicaciones Aereas de Veracruz which was purchased last June by William T. Churchill Morgan from Francisco Buch de Parada for 575,000 pesos, and in "Peck" Woodside, operator of Compania Aeronautica del Sur. The experimental permits granted to Jose Navarro Elizondo and to Manual Reachi have attracted attention, although neither company has started operation.

Navarro's permit covers a route north from Chihuahua to Hermosillo, Nogales, Mexicali and Tijuana; south from Chihuahua to Ojinaga, Villa Acuna, Piedras Negras, Nuevo Laredo, Reynosa, Matamoros, Tampico and Monterrey. Reachi's Compania Aero-Transportes S. A. has a permit to serve Monterrey and surrounding points; Tampico to Guadalajara; Aguascalientes to Mazatlan.

Turning from the speculative, a flight with Compania Mexicana de Aviacion, S. A. (CMA), largest and oldest of Mexico's airlines, drives home the adage that South of the border the airplane is truly utilitarian.

Even along the international run from Los Angeles to Mexico City, there is a constant flow of on-and-off locals at Hermosillo, Mazatlan and Guadalajara. When the bell tolls departure time at each of these ports, a new face or two or three appears to keep the DC-3 at capacity load.

From Mexico City, hub of the company's 6400 route miles, there are 34 daily arrivals and departures, 22 of them domestic and 12 international.

Of these CMA flights, the three daily trips to Merida, Yucatan, represent tops in utility. With no land transportation to the peninsula other than burro, everything is flown from cows for cross-breeding to daily newspapers. During the acute submarine menace, special flights of medicines and foodstuffs were the area's sole lifeline.

Not only for isolated Merida, but for all 20 cities served by the airline, there is a unique shopping service offered through the traffic department.

A person simply writes out a request for an article and turns it into the local CMA office. The request is then forwarded by plane to Mexico City headquarters. Here the shopping service makes the purchase which is flown back to the originating city. There is no charge for the service, only the regular air express rate which has a minimum charge of one peso or 20 cents. Furthermore, the purchase may be either C. O. D. or prepaid.

Frank O. Willy, general traffic manager, estimates 500 such requests each month, ranging from a hat to a sack of fertilizer.

Perhaps the classic example of what the airplane means in this country was told to us by an American mining engineer. His fellow passenger was an old Indian woman who held up three fingers just as the CMA plane began its approach into Mexico City. Thinking she meant three o'clock, he told her it was just one by his watch.

"No," replied the heavily shawled woman, "it is time to land. I've completed my third rosary and I've made this trip so often that I know it's just three rosaries between home and Mexico."

Taking the airplane out of the "class travel" category has been a paying proposition even in a country where an airline develops its own airports and flying aids. For the first ten months of 1943, 74,689 passengers flew on CMA as compared with 62,044 during entire 1942. In this same period, 2,671,063 kilograms of cargo were carried as compared with 2,246,865 in 1942.

As the wholly owned subsidiary of Pan American Airways, CMA services Pan Am's planes on the international runs from New Orleans and Brownsville through Mexico City to Guatamala, the Central American Republics and Panama.

Reflecting the heavy war traffic for both CMA and PAA's vital service to strategic Panama, the Mexican company's employes more than doubled since Pearl Harbor. On December 7, 1941 there were 505 employes; on December 7, 1943 there were 1376.

However, the full story of expediting priority supplies and passengers south of Mexico City must wait until the war ends. In the meantime, the Mexican employes are mighty proud of their part in helping Pan American deliver the goods when needed most urgently for the United States war strategy.

PAA Accepts Non-Priority Goods

Pan American Airways announces that air shipments destined to any of the 31 countries and colonies in Central and South America, the West Indies, and the Caribbean (including Mexico) no longer require air transportation priorities. Since the start of the war, PAA has had to decline shipments not under priority or U. S. Government bills of lading to all points of call in Brazil; Cayenne, French Guiana; Asuncion, Paraguay; and Paramaribo, Surinam. New cargo service now makes it possible to accept non-priority shipments to points served in these countries. However, shippers have been reminded that normal service cannot be guaranteed under present wartime conditions.

High Altitude Transport Planes Will Be Faster Than Pursuit Ships, Says Damon

The January issue of *SAE Journal*, magazine of the Society of Automotive Engineers, presents an article by Ralph Damon, vice president and general manager of American Airlines, in which Damon foresees a 1953 world of peace based upon international freedom of the air; 100,000 miles of airways linking American cities and world centers; hourly mail, express, and passenger service; overnight flights between continents; and planes of any recognized nation free to use any airport.

Damon contends that merely to extrapolate the future by past performance is to see the coming of supercharged, supersonic, squirt-type flying wings based upon engineering principles now developing. He believes commercial transport planes will cruise at better than 400 mph, and that high-altitude ships will exceed modern pursuit ships in speed.

Damon foresees the possible future merger of fixed-wing and rotating-lift type planes for civilian operation.

This is not a U. S. post office before Christmas, but is an example of how the Mexicans utilize the airplane. The scene is CMA's air express office in Mexico City.

Railroads Hold 10% Of Northeast Stock

Northeast Airlines, Inc., during the last fortnight, presented testimony before CAB Examiner Thomas L. Wrenn disclosing that 100,000 shares of its stock, owned by Boston and Maine and Maine Central railroads had been sold as a part of the carrier's plan to get from under the control of the rail carriers. This left the railroads with only a 10% stock interest in the airline, represented by 50,000 shares of stock.

The hearing ended the testimony phase of the long drawn out Boston-New York case which began in New York Sept. 8 and which was postponed at least twice because Northeast Airlines, interested in a route between Boston and New York, desired to submit new evidence that it was no longer under control of the rail carriers.

L. F. Whittemore, assistant to the president of both railroads, offered the testimony regarding the sale of the stock. He testified that 50,000 shares of the stock had been sold to Atlas Corp. of Jersey City, 25,000 shares to Pennroad Corp., 15,000 shares to Lehman Brothers, 5,000 shares to James F. Fitzgerald—a Northeast director and 5,000 shares to Carroll and Bedford Dunham, the Seligman Co. and Siegler & Co.

The transfer of this stock made Atlas Corp. the largest single stockholder in Northeast, bringing its holdings to 90,000 out of 500,000 shares. Atlas is represented on Northeast's Board of Directors by Radu Irimescu.

Under cross-examination, it was brought out that Whittemore has resigned as vice president and director of the airline. He owns 22,500 shares of Northeast stock.

S. J. Solomon, president of Northeast, also took the stand to testify that Whittemore, by his resignation as vice president and a member of the Board of Directors, no longer had any part in the management of the airline.

"The question of railroad control of the airline—if there was a question—has now been disposed of," Solomon said.

When the control issue was first decided by the Board last August, the railroads held 40% of the airline's stock. Later the railroads reduced their holdings to 30% and again the Board was asked to pass on the control issue. The air carrier asked postponement on one occasion while negotiations were underway to bring about a further reduction of the railroads' stock interest.

According to testimony at the recent hearing, the railroads' holdings have been reduced to 25,000 shares each.

Four AA Pilots Honored

Four multi-million mile pilots of American Airlines, each with more than 3,000,000 miles to his credit during 15 years' service with the airline, were presented gold service pins at a recent banquet in Hollywood. A. N. Kemp, president of American, made the awards. The pilots are Capt. Eyer L. Sloniger, Harold B. "Hap" Russell, Joseph B. Glass, and Leland Andrews. Kemp also presented 15-year service pins to Waldo Goodyear, now flight superintendent in charge of American's western division, and Louis Landsman, now line maintenance inspector.

All Done Up in Brown

Eight hostesses of Continental Air Lines are shown modelling the new dark brown gabardine uniforms for winter wear adopted by the airline. White tailored blouses and white trim on brown hats furnish a note of contrast. Left to right—JoAnne Hastings, Janet Downey, Shirley French, Betty Jane English, Mildred 'Tommy' Heck, chief hostess; Peg Kellerman, Betty Bailey, and Carroll Dunaway.

AA is 2nd Largest International Air Operator, Company Claims

AMERICAN AIRLINES, the largest U. S. domestic air carrier, is now "the largest international air transportation company in the world, save one," according to the December issue of *Flagship News*, company house organ.

Describing its operations for the Air Transport Command, American states that "the international operations of our company, including commercial routes and transatlantic routes flown for the Air Transport Command, are exceeded only by Pan American Airways.

"We are currently operating approximately 150 transatlantic flights a month, and by Nov. 15, 1943, we had chalked up a record total of more than 1,000 flights in the first 13 months of our overseas operations.

"With a crew who had never flown outside the Western Hemisphere before, American Airlines made its first North Atlantic flight on Oct. 8, 1942. On Dec. 16, a five-man crew left LaGuardia Field on the company's first survey flight across the South Atlantic and to India. Early operations across the North Atlantic were in C-87s and were discontinued when the winter months set in. Flights were made during the winter, however, to bases which were being constructed along the way. On Apr. 11, 1943, American . . . made the first survey flight ever made across the Atlantic from Newfoundland direct to Marrakesh, French Morocco, using a C-54A. The crew which made this flight were awarded the Air Medal by the Army. Regular operations across the North Atlantic were resumed simultaneously.

"Not all of the flights have stopped when they reached the other side of the Atlantic, however. Flight after flight we have made has gone eastward far beyond the Atlantic boundaries into vital combat zones, and the story of the heroic tasks our flight personnel and operations men have performed is a saga equal to that of any of the heroes of our past. In one case, we are the sole United States commercial air transport company engaged in these hazardous operations at the far ends of the earth where the enemy is a real power and not just something to read about . . .

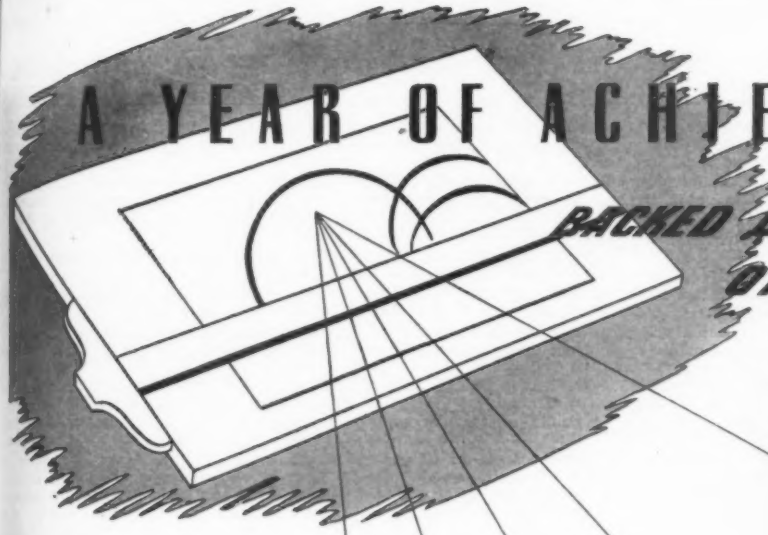
"It is a little known fact that American flew the first C-54 across the Pacific, loaded with vital aircraft parts for Gen. Kenny's hard-pressed forces in the Solomons . . .

"American was committed to training between 60 and 70% of all the Army men assigned to all the airlines and with the exception of some pilots who were placed as first officers on the domestic cargo runs which we operate for the Air Transport Command, all returned to the Army for assignment upon completion of their course."

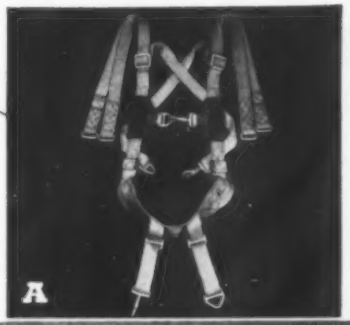
The company points out that almost half of its pre-war planes have been sold or leased. In spite of this, revenue passenger miles were up 5.7% in the first nine months of 1943 over a corresponding 1942 period, mail pound-miles increased 88.2% and express pound-miles 75.8%.

A YEAR OF ACHIEVEMENT

BACKED BY A LIFETIME OF EXPERIENCE



Only by ceaseless research and exacting engineering skills could such achievements in parachute design and construction be accomplished. Behind these pace-setting 1943 developments of the Pioneer Parachute Co. are years of experience and "know how". "Know how" that is proving itself on every battle front — experience that is having a far-reaching effect on the entire parachute industry.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A. NEW, IMPROVED HARNESS — for easier and quicker adjustments.

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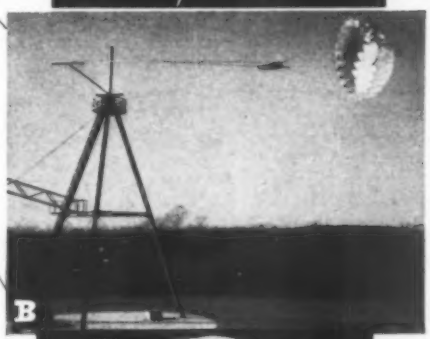
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C. FOOLPROOF, FOULPROOF PILOT CHUTE — instant, positive action.

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D

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SKYLINES

by C. Bedell Monro

President, Pennsylvania-Central Airlines

★ ★ ★

NEW AIR CONCEPTS MUST BE BUILT ON SERVICE

To the air traveler, new routes on a map mean only one thing—"Does it take me simply and quickly to the city I want to visit?" The question is answered satisfactorily if routes are integrated.

The post-war air traveler will be very much like the pre-war traveler. He will have interests chiefly in his own section of the country. Hitherto he has used other means of transportation, but he will now want the benefits of the air age. Comparatively few have interests in cities half a continent or a continent apart.

An airline which conceives service for the few will continue to think in terms of long distance, high-speed luxury service. An airline that wants to bring service to the many who live in our "forgotten cities" will think in terms of linking close-by cities in a combination of short haul and long-distance services.

In the final analysis, it is how much the air traveler gains, and not how much the air transport company can gain, which will decide which airlines will be accorded public support. To meet this criterion, an airline should think in terms of integrated routes—a comprehensive network of short haul and trunk lines so expertly interwoven that no traveler in the territory is very far from an airline stop, and so designed that the traveler can get to his destination without going "around Jack Robinson's barn."

An integration of service means competition. If we are to fulfill our promise, we should view competition not as the right to divert traffic from another carrier, but the right to *develop* traffic in new and old territories.

Pennsylvania-Central Airlines
National Airport, Washington, D. C.
(Advertisement)

Recent CAB Orders Affecting Air Carriers

ORDER No. 2563, DOCKET 1106: Granted Air Line Pilots Association, International, permission to intervene in the matter of the application for control by Western Air Lines, Inc. of Inland Air Lines, Inc.

ORDER No. 2564: Denied petition of National Airlines, Inc. for reconsideration of order of consolidation in the matter of the applications of various airlines for certificates and amendments of certificates of public convenience and necessity under sec. 401 of the Civil Aeronautics Act of 1938, and the petition of Birmingham, Ala.

ORDER No. 2565, DOCKET 1136: Approved interlocking relationships in the matter of the application of Hawaiian Airlines, Limited, and David Watson.

ORDER No. 2566, DOCKET 919: Approved interlocking relationships in the matter of the applications of John Elliot Slater and American Export Airlines, Inc.

ORDER No. 2567, DOCKET 525 et al: Consolidated applications of various airlines for certificates of public convenience and necessity authorizing additional air service in Mexico, Central and South America and the Caribbean.

ORDER No. 2568, DOCKET 525: Denied motion of Royal Dutch Air Lines (KLM) to consolidate its application, Docket No. 1187, with the consolidated proceeding involving applications for certificates of public convenience and necessity authorizing additional service between the United States and points in Mexico, Central, and South America and the Caribbean.

ORDER No. 2569, DOCKET 525 et al.: Granted permission to W. R. Grace and Company to intervene in the matter of the applications for certificates of public convenience and necessity authorizing additional air service in Mexico, Central and South America, and the Caribbean.

ORDER No. 2576, DOCKET 1106: Withheld from public disclosure certain documents in the matter of the application of Western Air Lines, Inc. for approval of the acquisition of control by Western Air Lines, Inc. of Inland Air Lines, Inc.

ORDER No. 2577, DOCKET 651, et al.: Consolidated into one proceeding applications of Mid-Continent Airlines, Inc., Kansas City Southern Transport Co., and/or Kansas City Southern Railway Co., Delta Air Corporation, and National Airlines, Inc.; granted permission to Chicago and Southern Air Lines, Inc., Braniff Airways, Inc., Transcontinental and Western Air, Inc., Eastern Air Lines, Inc., American Airlines, Inc. and the Department of Justice of the United States to intervene in this proceeding; cancelled order Serial No. 1054 which consolidated the proceedings in Docket 536 and Docket 413.

ORDER No. 2578: Denied petition of Mid-Continent Airlines, Inc. for reconsideration of order of consolidation in the matter of the applications of certain airlines for certificates and amendments of certificates of public convenience and necessity under Sec. 401 of the Civil Aero. Act of 1938, and the petition of Birmingham, Ala.

ORDER No. 2580, DOCKET 832: Denied motion to vacate order to show cause and fixed fair and reasonable rates for transportation of air mail at 0.3 mill per pound mile.

ORDER No. 2583, DOCKET 849: Fixed fair and reasonable airmail pay at 0.3 mill per pound mile over Routes 3 and 45.

ORDER No. 2584, DOCKET 525 et al: Granted department of Justice permission to intervene in application of Waterman Airlines case et al.

ORDER No. 2586, DOCKET 779: Denied motion of W. R. Grace & Co. to defer oral argument on jurisdictional question of Panagra U. S. terminal case.

ORDER No. 2587: Approved agreement relating to air conditioning by Pan American Airways Inc. of Braniff aircraft leaving Brownsville.

ORDER No. 2588: Approved agreement relating to air conditioning by Braniff of Chicago & Southern aircraft at Houston.

Order No. 2590, Dockets 300 and 499: Authorized enlarging the scope of reconsideration and permitting the inclusion of additional evidence in Pan American Airways, Inc. rate case involving service to New Zealand and Orient.

Order No. 2598: Approved Pan American and Panair do Brasil joint facilities agreement.

Order No. 2597, Docket 423: Denied Eastern Air Lines, Inc. petition for reconsideration and reargument in Memphis-Greenville case.

Order No. 2601: Suspended service temporarily out of the Philadelphia Municipal airport.

Order No. 2604: Ordered consolidation of applications of National & Eastern involving service from Miami to Key West.

Order 2603: Approved amended agreement of Air Traffic Conference and 23 Air Carriers regarding advertising practises.

Order No. 2607: Amended certificates of Pan American Airways, Inc. covering Latin American operations.

Order No. 2602: Fixed the rate of mail pay of Chicago & Southern at 0.3 mill per pound mile over routes 8 and 53.

Order No. 2608: Applications of Aerovias Nacionales (Docket 1196), American Export Air Lines (Docket 1232) and Colonial Airlines (Docket 1207) consolidated into the Latin America-Caribbean proceeding (Docket 525 et al)

Order No. 2609: Authorized Eastern Air Lines, Inc. to give service to Winston-Salem and Greensboro on the same flight.

Order No. 2612: Consolidation of applications involving Milwaukee-Chicago-New York routes.

Order No. 2611: Denied Pan Atlantic Steamship corporation permission to intervene in Latin America-Caribbean proceeding (Docket 525 et al)

Order No. 2615: Authorized Eastern Air Lines to inaugurate service at Lake Charles, La. on Route 5.

Order No. 2613: Granted Eastern Air Lines, Inc. permission to serve Columbia, S. C. through Owens Field.

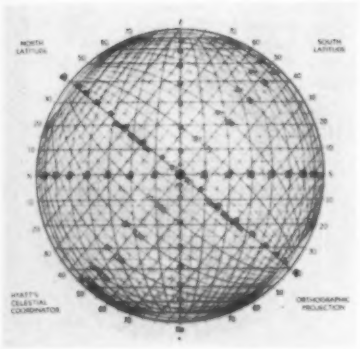
Order No. 2619: Granted department of Justice permission to intervene in application of Hughes Tool Co. for Board approval of its control of TWA.

Order No. 2595: Suspended Air Agency certificates of Horn's Flying School for 30 days period due to condition of parachutes.

CANADIAN PACIFIC AIR LINES reports that a total of 65,861 passengers, 1,958,169 pounds of mail, and 8,973,490 pounds of cargo was carried by its planes in the first 11 months of 1943. This represents increases of 21%, 32%, and 1%, respectively, over 1942.

DELTA AIR LINES announces that air mail and air express more than doubled in 1943 compared with 1942. A total of 1,355,881,897 mail pound miles was flown in 1943 as against 537,594,140 in 1942. Air express increased from 112,667,778 to 230,928,859 pound miles.

Air Navigators ★ ★ ★



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ANNAPOLIS, MARYLAND

CAB Certificate Holders and Applicants

(Continued from page 56)

*Mid-Continent Airlines, Inc., Municipal Airport, Kansas City 6, Missouri
Mid-West Airways, c/o Gordon M. Snyder, 210 W. 7th Street, Los Angeles 14, California
Midwest Haulers, Inc., 838 Edison Building, Toledo, Ohio
Milky-Way Transport Corporation, (Ray C. Heathington et al.), McKinney, Collin County, Texas
Milwaukee Boston Store, Inc., Milwaukee, Wisconsin
Mohawk Lines, Inc., Cresskill, New Jersey
Moore-McCormack Lines, Inc., 5 Broadway, New York 4, New York
Mountain Airways Co., Combs, Perry County, Kentucky
Mountain States Aviation, Inc., 3800 Dahlia Street, Denver 16, Colorado
Mutual Trucking Company, 838 Edison Building, Toledo, Ohio
*National Airlines, Inc., Municipal Airport, Jacksonville, Florida
New England Airlines, Inc., 71 Meadow Street, New Haven, Connecticut
New York and Bermudian Air Line, 77 River Street, Hoboken, New Jersey
New York-Los Angeles Airways, c/o B. Garelick, 715 E. Eighth Street, Los Angeles, California
North Coast Transportation Company, 200 Central Terminal, Seattle 1, Washington
*Northeast Airlines, Inc., General Logan Airport, East Boston, Massachusetts
Northern Michigan Airlines, Record-Eagle Building, Traverse City, Michigan
*Northwest Airlines, Inc., 1885 University Avenue, St. Paul 4, Minnesota
Nu-Planes Flyaway Service, Inc., c/o Harry C. Ames, Esq., Transportation Building, Washington, D. C.
Ohio Airlines, 1121 Keith Building, Cincinnati 2, Ohio
Ong Aircraft Corporation, P. O. Box 214, Kansas City, Missouri
Oregon Airways, Inc., c/o Haas & Schwabe, 210 Pacific Building, Portland, Oregon
Oregon Motor Stages, 506 S. W. Mill Street, Portland 1, Oregon
Otto Aviation Corporation, Airline Division, Union Building, 9 Clinton Street, Newark, New Jersey
Owosso Flint Bus Lines, 109 East Comstock Street, Owosso, Michigan
Ozark Air Lines, Inc., 439 West Olive, Springfield, Missouri
P & B Transfer and Storage Company, 417 South Main Street, Memphis, Tennessee
Pacific Northwest Airways, c/o Ezra Royce, 628 N. W. 6th Avenue, Portland 9, Oregon
Page Airways, Inc., Rochester Municipal Airport, Rochester, New York
Page, Clarence E., P. O. Box 1946, Oklahoma City, Oklahoma
*Pan American Airways, Inc., 135 E. 42nd St., New York, New York
*Pan American-Grace Airways, Inc., 135 E. 42nd St., New York, New York
Pan Atlantic Steamship Corporation, Merchants National Bank Bldg., Mobile, Alabama
Parks Air College, Inc., Parks Airport, East St. Louis, Illinois
*Pennsylvania-Central Airlines Corporation, Washington National Airport, Washington, D. C.
Philadelphia & Eastern Airlines, Inc., 6551 Juliet Avenue, Lancaster, Pennsylvania
Picknelly, Peter, 144 Bridge Street, Springfield, Massachusetts
Pierce Auto Freight Lines, Inc., Medford, Oregon
Pioneer Airlines, Suite I-32, Dunster House, Cambridge, Massachusetts
Plaza Express Company, Inc., 1035 South 10th Street, St. Louis, Missouri
Producers' Air Lines, Inc., 1301 Elm Street, Toledo, Ohio
Putnam Airlines, 18 Truesdell Street, Putnam, Connecticut
P-T Air Service, Inc., and Roy C. Mahon, Municipal Airport, Hayes, Kansas
Racine Flying Service, Inc., Racine, Wisconsin
Railway Express Agency, Inc., 230 Park Avenue, New York, New York
R-B Freight Lines, Inc., Aberdeen, South Dakota
Rebel Air Freight, Inc., 104 St. Francis Street, Mobile, Alabama
Ringsby Truck Lines, Inc., 3262 Blake Street, Denver, Colorado
Rio Grande Motor Ways, Inc., 1531 Stout Street, Denver, Colorado
Rocky Mountain Motor Company, 1730 Glenarm Place, Denver, Colorado
Salt Lake Transit, Inc., 501 First National Bank Bldg., Salt Lake City, Utah
Schreiber Trucking Company, 1391-1397 Washington Blvd., Pittsburgh, Pennsylvania
Seaboard Air Transport, Inc., Lumberton, North Carolina
Seaboard Airways, Inc., 15 Broad Street, New York, New York
Shannon's, 1301 North Main Street, Fort Worth, Texas
Shawmut Air Freight and Transport Company, 210 Albany Street, Boston, Massachusetts
Skyway Corporation, 1125 Hospital Trust Building, Providence 3, Rhode Island
Southair, Inc., 705 Union Planters National Bank Bldg., Memphis 3, Tennessee
South East Airlines, Municipal Airport, Spartanburg, South Carolina
Southeastern Air Express, Inc., 573 W. Peachtree Street, N. E., Atlanta, Georgia
Southeastern Greyhound Lines, 801 N. Limestone Street, Lexington 14, Kentucky
Southern Aviation Corporation, 1029 Stahlman Building, Nashville, Tennessee
Southwest Airways Company, 9200 Wilshire Boulevard, Beverly Hills, California
Southwest Feeder Airlines, Inc., 30 Pine Street, New York, New York
Southwestern Air Lines, Inc., c/o Royston & Rayzor, 625 Cotton Exchange Bldg., Houston, Texas
Southwestern Freight Lines, 230 N. 9th Street, Phoenix, Arizona
State Airlines, Inc., P. O. Box 1862, Charlotte, North Carolina
Stuart, B. M. & Sons, Russellville, Kentucky
Summit Airways, Inc., P. O. Box 493, Laramie, Wyoming
Sunshine Airlines, Nunn Building, Amarillo, Texas
Texas Airlines, Box 21, College Station, Texas
Texas-New Mexico Air Lines, c/o Amarillo Baking Company, P. O. Box 788, Amarillo, Texas
Thalhimer Brothers, Inc., Richmond, Virginia
Thomas Air Service, Farmington, New Mexico
Trailways of New England, Inc., 144 Bridge Street, Springfield, Massachusetts
Transamerican Freight Lines, Inc., 751 15th Street, Detroit, Michigan
*Transcontinental & Western Air, Inc., 101 W. 11th Street, Kansas City 6, Missouri
Tri-State Aviation Corporation, c/o John Bogart, Pan American Grace Airways, Inc., Lima, Peru, South America
Turner, Roscoe Aeronautical Corp., Municipal Airport, Indianapolis, Indiana
Union Air Lines, The, 2228 Georgia Avenue, N. W., Washington, D. C.
Union Airways, Inc., Wareham Building, Hagerstown, Maryland
*United Air Lines Transport Corporation, 5959 S. Cicero Avenue, Chicago, Illinois
United Fruit Company, One Federal Street, Boston 10, Massachusetts
United Transports Inc., First National Bank Bldg., Oklahoma City, Oklahoma
Universal Air Freight Corporation, 40 Rector Street, New York, New York
*Uraba, Medellin & Central Airways, Inc., 135 E. 42nd Street, New York, New York
Van Son, John C., 38 Delwood Road, Kenmore, New York
Vermont Transit Company, Inc., 133 St. Paul Street, Burlington, Vermont
Vineland Flying Service, Inc., P. O. Box 55, Vineland, New Jersey
Virginia Central Airlines, 209 Lynch Building, Lynchburg, Virginia
Washington Motor Coach Company, Inc., 300 Central Terminal Bldg., Seattle, Washington
Waterman Airline, Inc., Merchants National Bank Building, Mobile, Alabama
West Coast Airlines, Inc., 500 Insurance Building, Seattle, Washington
*Western Air Lines, Inc., 6331 Hollywood Boulevard, Los Angeles 28, California
White Circle Line, Inc., 8 Frew Terrace, Thompsonville, Connecticut
Wichita Falls Air Transport Corporation, P. O. Box 809, Wichita Falls, Texas
Wiggins, E. W. Airways, Inc., P. O. Box 1089, Providence, Rhode Island
Wiley, F. S. Company, Inc., Laconia, New Hampshire
Willis Day Storage Company, 801 Washington Street, Toledo, Ohio
Wilson, Ray, Inc., Park Hill Airport, Denver, Colorado
W. R. Grace & Company, 7 Hanover Square, New York, New York
Yellow Cab Company of Cleveland, Inc., 2020 West Third Street, Cleveland, Ohio*

Canadian Pacific Report for '43

Canadian Pacific Air Lines carried 70,000 passengers, 2.2 million pounds of mail, and 9.1 million pounds of air cargo during 1943. Passenger and mail traffic increased 21% and 30%, respectively, over that of 1942. Air cargo declined 6%. Mileage flown in 1943 totaled 6 million, an increase of 15% over 1942. The company established traffic offices during the year in Victoria, Seattle, Fort St. John, Whitehorse, Fairbanks, Saskatoon, Montreal, Quebec City, Arvida, Baie Comeau, and Rimouski. A main line dispatch system was inaugurated with regional offices at Vancouver, Fort St. John, Edmonton, and Montreal.

NORTHWEST AIRLINES reports that air express carried on its planes during the first 11 months of 1943 totaled 1,391,668 pounds, an increase of 335,237 pounds over the same period of 1942. Express pound miles for the 11 months totaled 904,736,663, an increase of 119,648,289 pound miles over the same period of the previous year. Airmail pounds carried set an all-time high record of 4,466,961 pounds, as compared to 2,773,076 pounds carried during the same period in 1942.

WESTERN AIRLINES reports that the number of revenue miles flown in November was 54.43% over the same month last year, or 3,166,057 miles against 2,048,861 miles.

MID-CONTINENT AIRLINES announces for November: revenue passenger miles, 1,187,997; mail-pound miles, 30,535,577; express-pound miles, 3,402,588.

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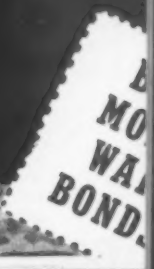

URTISS-WRIGHT TECHNICAL INSTITUTE...BEFORE THE WAR · DURING THE WAR · AFTER THE W

Routes to Canada

(Continued from page 40)

Western Air Lines, Inc.—Lethbridge, Can. to Anchorage, Alaska via Calgary, Edmonton, Grand Prairie and Whitehorse and beyond Whitehorse (a) to Fairbanks and Anchorage and beyond Whitehorse (b) to Northway and Anchorage (Docket 834); (2) Seattle to Nome (Docket 861); (3) Seattle to Victoria (Docket 935); (4) Across Canada to the Orient, via Alaska; (5) Lethbridge to Anchorage, via Calgary, Edmonton, Grand Prairie, Ft. St. John, Ft. Nelson, Watson Lake and Whitehorse (Docket 628).

Northeast Airlines, Inc.—Boston to London, via Newfoundland (Docket 855); (2) Bangor, Me. to Northwest River, Labrador, via Moncton, Stephenville, St. Johns and Argentina, Newfoundland (Docket 682).

Chicago and Southern Air Lines, Inc.—Chicago to Batavia, Java via Winnepeg, Edmonton, Whitehorse & Nome, Alaska (Docket 880).

American Airlines, Inc.—Syracuse to Ottawa (Docket 969); (2) Syracuse to Montreal (Docket 970); (3) New York to London, via Newfoundland and Chicago to London, via Newfoundland (Docket 996).

Mid-Continent Airlines, Inc.—Minot, N. Dak. to Regina, Canada.

Inland Air Lines, Inc.—Great Falls, Mont. to Nome, Alaska via Lethbridge, Calgary, Edmonton, Grand Prairie, Ft. St. John and Whitehorse, Canada and Fairbanks, Alaska (Docket 902).

Northwest Airlines, Inc.—Seattle to Victoria (Docket 935); Seattle to Nome (Docket 861).

Pennsylvania-Central Airlines Corp.—Buffalo to Ottawa (Docket 1195).

Colonial Air Lines, Inc.—Massena to Ottawa (Docket 1070).

United Air Lines Corp.—Cleveland to Montreal via Ottawa (Docket 1217).

Non-certificated applicants, most of whom ask to carry freight or express, as follows: Keeshin Air Freight, Inc. to 79 basic points in U. S. and Canada (Docket 910).

Great Lakes Storage and Moving Co. to all points in U. S. and Canada (Docket 903).

W. J. Dillner Transfer Co. to Alaska over Canada (Docket 845).

John C. Van Son—Buffalo to Niagara Falls, Canada (Docket 958).

Shawmut Air Freight and Transport Co.—1. Boston to Montreal. 2. Boston to Halifax, via Blissville, Moncton and Dartmouth. 3. Boston to London, via Halifax (Docket 831).

Automobile Air Freight Corp.—Illinois to numerous points in Canada (Docket 1105).

Washington Motor Coach Co.—Port Angeles, Wash. to Victoria, B. C., Canada (Docket 1120).

Coastal Tank Lines—all points in U. S., Mexico, Alaska and Canada (Docket 961).

Vancouver Island Air Lines—Seattle to Victoria (Docket 1007).

North Coast Transportation — Blain, Wash. to Vancouver, B. C. (Docket 1007).

NATIONAL AIRLINES, Inc., reports that for year ending June 30, net income totaled $193,000, or 71 cents a common share, against $170,224, or 63 cents a share, for the preceding year. Operating revenue totaled $1,382,310 against $930,884.

Chicago & Southern Mail Pay Reduced

Another air carrier—Chicago and Southern Air Lines, Inc.—entered last fortnight the growing group of airlines which have recently had their mail pay reduced to 0.3 mill per pound mile by CAB. The reduction is effective as of Feb 1, 1943 over the carrier's entire system between Chicago and New Orleans and between Memphis and Houston via intermediate points.

The old rate of mail pay over different segments of Chicago and Southern's route varied from 22.5c, 26.5c, 35.5c and 46c per airplane mile subject to certain operating conditions, the Board said. The new rate of 0.3 mill per pound mile, computed on direct airport-to-airport mileage, will effect an estimated reduction in mail pay to Chicago and Southern of approximately $370,000 per year. Harllee Branch dissented from the majority opinion.

In the Chicago and Southern case the Board affirmed and made final tentative findings and conclusions contained in a show cause order issued to the carrier on January 11, 1943. A spokesman for the Board pointed out that "there are pending no objections by respondent to the Board's (show cause) order," and that disposition of the proceeding in this way expedited the work of the Board, now faced with the heaviest schedule in its history.

$68,935 Profit Estimated

"On the basis of the estimated results of respondent's scheduled air transport operations we find that it may be expected to operate under presently foreseeable circumstances with its present passenger and express rates at a profit of $68,935 per annum, or 3.59c per revenue mile, before mail pay and Federal income taxes on the 1,920,603 estimated revenue miles to be flown. Such profit amounts to a return of 8.15% before Federal taxes on its approved investment allocated to scheduled air transport operations at October 31, 1942. It is apparent that the fixing by us of a fair and reasonable rate of mail compensation does not require the allowance in the mail rate of amounts heretofore frequently necessary in mail rate cases to permit the carrier to cover deficiencies in revenues in the carrier's commercial operations."

Branch in dissenting from the majority stated, "I set out at some length the basis of my conclusion that the mail rate of 0.3 mill per pound mile in these cases included a substantial element of government subsidy and was therefore unsound. The same mail rate is fixed for Chicago and Southern and is subject to the same objections.

"Under such a rate, on the basis of present estimates, the carrier will receive on that part of its investment apportioned to the mail service a profit of 94.09% before Federal income taxes, and a net profit of 56.46% after 40% Federal income taxes. Commercial revenues together with mail revenues at 0.3 mill per pound mile will provide Chicago and Southern with an operating profit of 31.68% on its total investment used and useful in scheduled air transportation, and an overall net profit on that investment of 19% after 40% Federal income taxes."

Route Applications

(Continued from page 46)

Kaufmann and Baer Co.

This applicant also doing business under the name of Gimbel Brothers, of Pittsburgh, filed with CAB an application for air transport of persons and property over five routes originating and terminating in Pittsburgh. The applicant, operates a retail department store and proposes to use helicopters over routes extending into areas of Pennsylvania, Ohio, West Virginia and Maryland. (Docket 1261)

Mountain States Aviation Inc.

Through its president, Harry B. Combs, 3800 Dahlia St., Denver (16), Col., this company filed an application requesting four circular routes originating and terminating in Denver. The routes would extend to Grand Junction on the west and Julesburg and Burlington on the east with many intermediate points on all routes. Conventional type of aircraft would be used in transport of persons, property and mail. (Docket 1240)

Northwest Airlines, Inc.

This carrier filed two applications for new routes in the northwest section of the U. S. A route for air transport of persons, property and mail is asked between terminal points Butte, Mont., and Portland, Ore., via the intermediate point Pendleton, Ore. (Docket 1241) and a route between Milwaukee and Spokane, via Green Bay, Duluth, Fargo, Minot and Great Falls. (Docket 1242)

P-T Air Service, Inc.

This company of Municipal Airport, Hays, Kan., together with Roy O. Mahon, a fixed base operator of Municipal Airport, Dodge City, Kan., filed an application for seven routes for air transport of persons, property and mail in local, feeder and pickup operations in Kansas, Nebraska, South Dakota, Texas and Oklahoma. The routes, centering largely in Kansas, cover 2,807 miles. Twin-engine planes would be used in passenger operations and a single engine plane in the airmail pickup service. (Docket 1253)

Tri-State Aviation Corp.

John B. Bogart, c/o Pan American-Grace Airways, Inc., Lima, Peru, S. A., filed for this company an application for 11 passenger-airmail pickup routes in five states centering around Ohio. Principal terminals include Cincinnati, Youngstown, Columbus, Detroit, Evansville, Indianapolis, South Bend, Knoxville, Nashville and Lexington. Bogart is vice president and director of the company. He is now engaged as captain on Panagra's South American flight operations. (Docket 1248) In a second application, Tri-State asked for a certificate for air transportation of mail, property and passengers by helicopter between airport terminals, post offices, business establishments and residential areas in Ohio, Indiana, Kentucky and Michigan. (Docket 1249)

Albert L. Zimmerly

Albert L. Zimmerly, of Lewiston, Idaho filed for routes for air transport of persons, property and mail between Spokane and Los Angeles, Spokane and Idaho Falls, Idaho, Missoula, Mont. and Seattle. Total mileage involved is 2,176 miles. Aplicant who now operates the Zimmerly Air Transport flying school would use Douglas DC-3 and Beechcraft Model 18-S equipment. (Docket 1268)

WILCOX IS IN SERVICE

. . . Along the Route of The Capital Fleet

Photograph, courtesy PENNSYLVANIA-CENTRAL AIRLINES,
(left) B. J. Vierling, Supt., Maintenance, (right) Earl Raymond, Chief, Ground Station Maintenance.

"Installation of Wilcox transmitters, at many of our points, has given our communications the high degree of dependability so necessary for airline operations," states Mr. Earl Raymond of Pennsylvania-Central Airlines. In addition to installations on major airlines throughout the United States, Wilcox radio equipment is being used now in connection with world-wide military aircraft operations.

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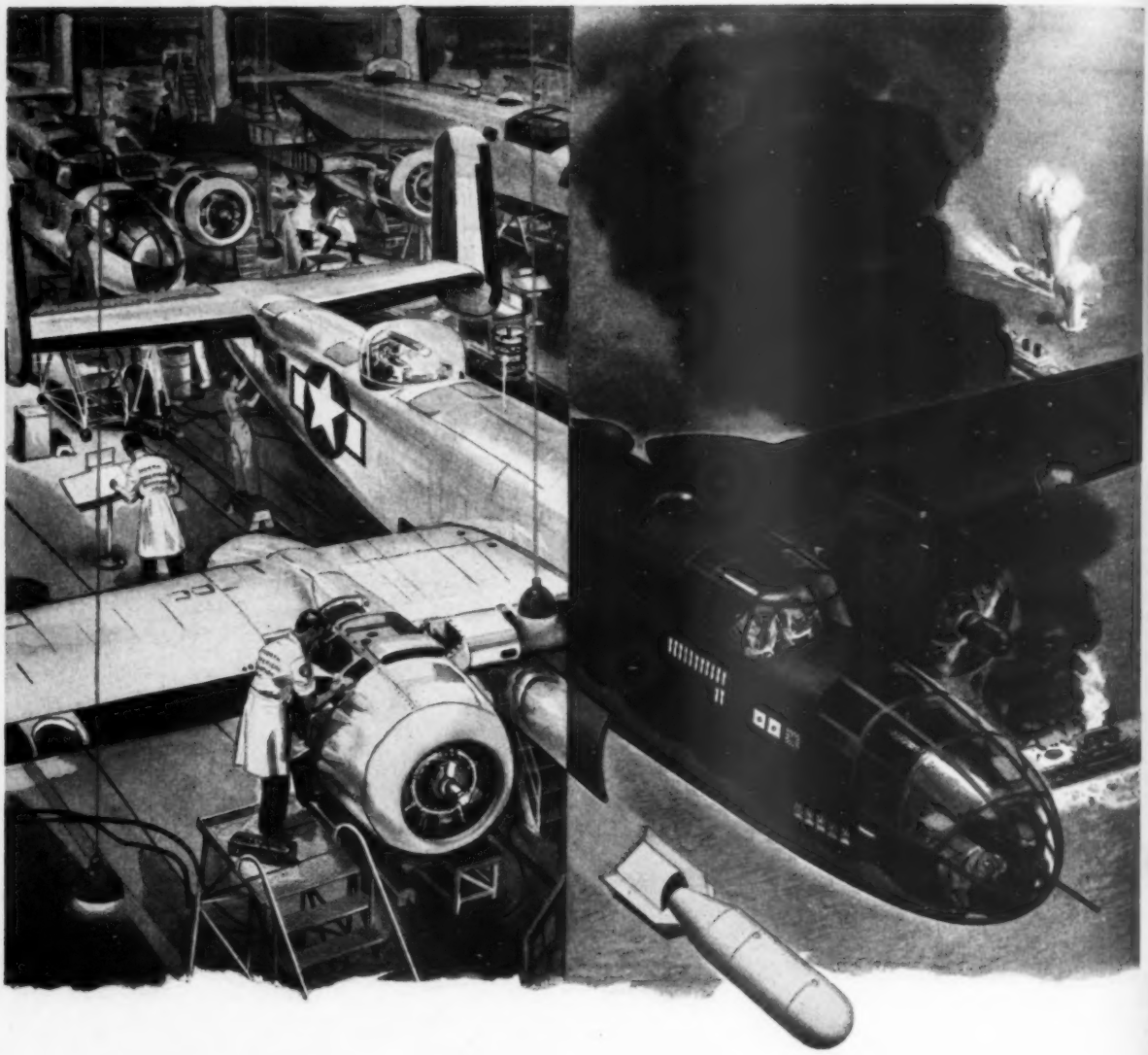

Partners in the Pace that Wins

You hold your head a little higher. You reach across space and shake the hand of the bombardier of that B-25 Mitchell—the wildly happy American boy whose "Pearl Harbor forget-me-nots" have so accurately found their target.

In the crew of that Mitchell bomber are unseen thousands of determined American workers—the men and women who build North American planes.

On the production front, as on the battlefront, "North American Aviation Sets the Pace"—a killing pace for the Axis!

Trained employees accompany our planes to the battle zones. Their reports are added to suggestions from our engineers, test pilots, plant workers—and North American planes come off the lines better... sooner.

That's just another reason our nation can build Billy Mitchell bombers, Mustang fighters and Texan combat trainers... planes that are better than the best of the Axis brood.

Partners today... as we out-produce, out-fight the enemy. Partners tomorrow... as we build our new world for free men!

North American Aviation, Inc., designers and builders of the B-25 Mitchell bomber, AT-6 Texan combat trainer, P-51 Mustang fighter, (A-36 fighter-bomber). Member Aircraft War Production Council, Inc.

North American Aviation *Sets the Pace!*

Airline Personnel

Knight

Wilson

Moore

Show

Young

Anderson

Chicago and Southern Air Lines announces that **Capt. Reed Knight**, chief pilot of commercial operations, has been named superintendent of flying and director of military cargo. He will be succeeded as chief pilot by **Capt. L. D. "Hap" Anderson**, who heads the seniority list among the company's military and flight personnel. C and S also announces that **J. A. Young**, general manager of the company's modification center at Memphis, Tenn., has been named assistant to **Bruce E. Braun**, vice president—operations.

Trans-Canada Air Lines announces that three city traffic managers have been promoted to DTM. They are **W. R. Campbell**, Ottawa; **D'Arcy S. McLeod**, Edmonton; and **John J. Robinson**, Vancouver. Other appointments: **Stanley L. Blowes**, traffic representative at Windsor, has been named city traffic manager; **Gerald E. Gray**, traffic representative at Montreal, has been shifted to Moncton in the same capacity; **C. E. Houlton**, traffic representative, Newfoundland, has been transferred to Winnipeg; **Alan R. Godbold**, traffic representative, Winnipeg, has been transferred.

Donald R. Wilson, chief instructor of Continental Air Lines' Air Transport Command ground school, has been named CAL supervisor of training.

Paul W. Pate, for the past eight years associated with the motor transportation industry, has been appointed traffic analyst with Delta Air Lines.

E. O. Miller, for 18 years associated with the New York Central Railroad in Buffalo, N. Y., has been appointed traffic representative for Pennsylvania-Central Airlines in Detroit.

Western Air Lines announces appointment of **Grayson Show** as DTM in Long Beach, Calif. He was formerly an industrial engineer for Douglas Aircraft Co.

Henry B. Moore, formerly principal industrial economist for the Price Analysis Division, Bureau of Labor Statistics, has been named director of research for Braniff Airways.

Bus Lines Seek Delay in CAB Decisions on Intermediate Stops

BUS COMPANIES revealed during the last few weeks another move in their strategy to gain both time and possibly the necessary enabling legislation with reference to their proposed entry into the air transportation field.

Counsel for two surface companies—Greyhound Corp., of Chicago and Blue Ridge Lines Inc,, of Hagerstown, Md., filed memoranda with the Civil Aeronautics Board urging the Board either to deny applications of trunkline carriers for intermediate stops or, if public necessity, because of the war, requires the service, then to issue certificates on a temporary basis. Under such a plan, surface carriers contended that the needs of a particular area could be considered later in the light of a national policy which the Board is expected to adopt with reference to local and feeder operations.

Greyhound, which has 78 applications on file for 49,000 miles of route, filed its memoranda in connection with TWA's application for a stop at Morgantown, W. Va., and also in connection with applications of TWA, Braniff & Continental for service to Topeka, Salina & Hutchinson, Kan. Blue Ridge Lines, with applications on file covering routes in several mid-eastern states, voiced its opposition to TWA's request for the Morgantown stop.

The bus companies pointed out that their applications are virtually frozen while it appears that the existing carriers will be getting into the local field "a piece here and a piece there."

Action of the Board in granting carriers new stops "will encourage and foster a mad scramble for points and routes by existing carriers throughout the U. S." the memoranda submitted by Blue Ridge Lines stated. "To encourage or foster such a scramble at a time when inauguration of service by other proposed carriers is 'frozen' due to the present national emergency, will adversely affect the future of these pending applications and the relation of the service proposed to the national air pattern to be evolved by this Board."

Blue Ridge contended that public convenience and necessity requires that the national interest takes precedence over purely local considerations. It stated further, "It was not the intent of Congress that the transportation system should be frozen to its present pattern or reserved for existing carriers." For these and other reasons, Blue Ridge urged the Board to either refuse to grant these requests for new stops or issue temporary certificates. The applicant pointed out there were approximately 14 non-certificated applicants interested in serving the Morgantown area.

The Greyhound Corp. called the Board's attention to the fact that its applications had not yet been set for hearing, asserting further: "As the operations proposed by Greyhound are in the nature of local as distinguished from trunkline service, it appears that its interests may be vitally affected by any action of the Board which would authorize existing trunkline carriers to serve the smaller communities from which the Greyhound naturally would expect to derive its principal traffic when and if its applications are granted."

Continuing, Greyhound pointed out: "It is evident that this conflict of interest may be present in connection with many of the applications which are now pending before CAB. At the same time it would not be practicable from the standpoint of either the Greyhound or the Board for Greyhound to attempt to present its case in connection with each application wherein this issue may arise."

Greyhound then urged the Board to grant certificates only on a temporary basis if the war effort required additional stops on the routes of existing carriers.

Film Shows Wellington Assembly

"Wings in Record Time", a British Ministry of Information film being distributed in the United States, shows how the workers at a certain aircraft factory in northwest England assembled a Wellington bomber in 24 hours and 48 minutes on a week-end. The workers did this job on their own, bettering the mark of 30 hours they aimed at when the project began on a Saturday morning.

CAB Gives PAA Authority To Change Caribbean and South American Routes

The Civil Aeronautics Board announced on Dec. 30 its decision authorizing Pan American Airways, Inc. to make several changes in its routes in the Caribbean area and South America. The changes, made with the idea of improving existing services, do not involve the authorization of services in territories not presently being served by Pan American and with the exception of the carriage of mail to nonmail points, are presently authorized under exemption orders issued by the Board.

The Board's order amend the carrier's certificate to include Ciudad Truijillo capital of the Dominican Republic, on that carrier's route from Miami, Florida to La Guaria, Venezuela. Ciudad Truijillo is a new point on the route and La Guaria, is the closest air service point to Caracas, the Capital of Venezuela. The order was approved and signed by President Roosevelt on December 23, 1943.

The Board also authorized substitutions along the route for points previously served. Ciudad Truijillo substitutes for San Pedro in the Dominican Republic, Barcelona for Guanta in Venezuela and Maturin for Garipito, also in Venezuela. These substitutions will make possible more direct air service between the capitals of the Dominican Republic, Venezuela and Brazil.

Pan American is now operating a "cut-off" route from Belem, Brazil to Rio de Janeiro, capital of Brazil, under an exemption order from the Board dated October 15, 1942. The Board's amendment permanently approves this operation and authorizes Barrieras as an intermediate stop along this route. According to the Board, this "cut-off" reduces the distance from Miami to Rio by approximately 800 miles and one day's flying time.

On the route from Belem down the east coast of Brazil to Rio, the Board permitted the airline to suspend service at Sao Luiz substituting Fortaleza. Intermediate stops between Belem and Rio on Pan American's coastal route previously without airmail service, are now authorized by the Board as airmail service stops. These new airmail stops are Areia Branca, Maceio, Aracaju, Caravellas and beyond Rio on the route to Buenos Aires, Iguassu Falls and Curityba.

United Approves New Stock Plan; Changes Name

Stockholders of United Air Lines Transport Corp., at a special meeting in Chicago Dec. 22, approved a financing plan expected to raise approximately $10,000,000 for postwar development and expansion. Proposals approved were to:

1. Change the company's corporate name to United Air Lines, Inc.
2. Authorize 200,000 shares of cumulative preferred stock, issuable in series.
3. Authorize 100,000 shares of management stock and permit the issuance of such stock without offering it to holders of common stock.
4. Change the name of the present capital stock to common stock and increase its par value to $10 a share from the current $5 value.
5. Increase the authorized number of shares of common stock to 2,500,000 shares.
6. Permit issuance of cumulative preferred stock of a series not convertible into common stock, without offering such shares to holders of common stock.

Panagra Piles Up Nearly Five Million Plane Miles During Record Year 194

Pan American-Grace Airways' operations totaled 4,700,000 plane miles duri 1943 as compared with 4,030,000 in 19 Passenger miles totaled 57,500,000 against 43,000,000 the previous year, ac cording to a year-end report.

The airline carried 69,000 pasengers compared with 56,770; 2,000,000 pounds express as against 1,330,000 pounds; 280,0 pounds of mail as against 242,000 pound Personnel rose from 1,600 to 2,500.

Panagra claims it was largely instru mental in ending Axis airline penetrati in the eight republics it serves on t West Coast of South America throug more efficient air transport service befor the war.

"Panagra continued, during 1943, to increase schedules and frequencies, t pioneer new routes, and to reduce fare as much as possible with the equipment available," said the company report. "Acquisition of three new DC-3s permitted Panagra to increase its trans-Bolivian and Lima, Peru-Santiago, Chile, services and to operate extra cargo flights of importance in stimulating the economic life among the west coast republics.

"In February, Panagra extended to Buenos Aires the all-cargo route inaugurated the previous year from Balboa in the Canal Zone to Lima, Peru, thus making the 5,400-mile run the world's longest all-cargo commercial air transport operation. In Ecuador, Aerovias del Ecuador-Panagra extended operations north from Quito to Ipiales in Colombia. In Peru a modern office building was completed at the airport at Limatambo. At Lima, in May, during Vice President Henry A. Wallace's goodwill tour of Latin America, Panagra set a new record for west coast air operations as six of its DC-3s took off in two hours with more than 100 passengers, 11,000 pounds of cargo, mail and baggage."

Attend Annual TCA Traffic Meet

The Annual Traffic Conference of Trans-Canada Air Lines, held in Winnipeg, Manitoba, recently was well attended by district traffic managers and city traffic managers of the system. Front row (left to right): S. L. Blowes, C.T.M., Windsor, Ont.; J. T. Moore, C.T.M., Calgary, Alberta; W. R. Campbell, C.T.M., Ottawa, Ont.; R. E. Deyman, Asst. D.T.M., Toronto, Ont.; W. J. Dalby, Traffic Mgr., Winnipeg; W. G. Courtney, D.T.M., Toronto, Ont.; Secretaries: Miss E. H. Coxon and Miss I. R. Ledingham, both of Winnipeg, Manitoba; and G. R. Wilson, D.T.M., Montreal, Que. Back row (left to right): D. S. McLeod, C.T.M., Edmonton, Alberta; J. J. Robinson, C.T.M., Vancouver, B. C.; Bruce Hay, Traffic Rep., Winnipeg, Man.; V. H. Fulcher, Asst. to Traffic Mgr., Winnipeg; S. S. Sime, C.T.M., Halifax, N. S.; H. Harling, D.T.M., Winnipeg, Man., and Harper McNeill, D.T.M. of New York.

TWA Booklet Tells Aims of Airline to Develop Present Routes Locally

Transcontinental & Western Air, Inc. has published an attractive booklet entitled "The Airline and Your Community," which contains detailed information concerning present and proposed services of TWA, conveniently classified and illustrated with color maps.

"The pattern of domestic airline expansion which TWA proposes has one basic principle, that is, to concentrate on the development of its present territory and to render to intermediate cities on or adjacent to its present routes the highest possible standard of transcontinental service," states Jack Frye, company president, in the foreword.

The booklet further enunciates TWA policy by asserting that in the first major phase of its development, air transportation provided rapid service between large cities hundreds of miles apart. Today's phase of development calls for air service for the many smaller cities which have interests with the big industrial and distribution centers.

The booklet outlines the present and proposed service on page maps for each state embraced in TWA's system. The back cover of the booklet is a folded map of TWA's present and proposed service.

The Stars—always the wonder of the human race—have more than ever become a guide and a savior to man in this War, though they are largely eclipsed in our thoughts by the sciences of the Earth and the Air.

Celestial navigation—for centuries the guiding protection of mariners—is now guiding our Bombers and Air Transports over thousands of miles of trackless ocean and uncharted wilderness, day and night, with uncanny accuracy.

Thorough training in the science of the Heavens is as important to our long-range Air Navigators as their training in the use of compass, radio and instruments. Like the Pilots who fly them, these navigators receive much of their air training behind reliable engines built by Jacobs.

JACOBS AIRCRAFT Engines

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for Electronics

★ A-N Connectors—Plugs and Receptacles—all sizes—all styles—built to Army-Navy specifications.

★ Cable Clamps—bushed and plain in all sizes—A-N approved for all types of open wiring assemblies.

★ Gun Firing Solenoid, Automatic Grounding and Short Circuiting Connectors for special requirements.

★ Pressure-Tight — Explosion-Proof — Light-Proof Connectors and others for special applications.

★ Conduit Fittings, A-N approved—all types for use with solid and flexible A-N conduit.

★ Low-Loss Connectors—coax and twinax types for high frequency and micro-wave installations.

★ British Type Electrical Connectors serving requirements approved by the British Air Ministry.

★ Radio Parts—plugs, receptacles, sockets, connectors, microphone equipment, and electronic devices.

★ Conduit in all sizes—durable construction in flexible aluminum and synthetic covered flexible aluminum.

★ Low-Loss Solid Dielectric Coax and Twinax Cables in sizes built to the new Army-Navy specifications.

★ Beaded Type Coax and Twinax Cables of Polystyrene and Mica-Filled Bakelite for critical requirements.

★ Synthetics for Electronics—sheets, tubes, rods, and custom-machined Polystyrene.

Everything—Component parts for conduit ...ring assemblies, or, if desired, complete harnesses and ...e wire assemblies, including connectors, conduit, fittings, ...achments built to specifications.

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Depend upon AMPHENOL Quality

Reservations Set-up of PAA's Western Division Revamped

Pan American Airways' Western Division announces a reorganization of its reservations set-up to "double" its services. Key men of the reservations department, Division Reservations Superintendent Morris S. Brooks, Reservations Foremen Richard F. Mason of New Orleans; Pedro Echeverria, La Guaira and Keith N. McCune of Balboa, meeting recently in New Orleans planned changes that will be completely effected early this year.

The new system includes a simplification of charts, enabling clerks to determine at a glance if desired space can be confirmed. As a double check, a master file is to be maintained, affording passengers additional protection. If "off-loaded" by wartime priorities, passengers thus can be assured the earliest available space on Western's Clippers.

Helpful to speeding traffic are numerous services already in effect at Pantra in Brownsville. A complete picture of travel possibilities on Western flights is a weekly space forecast which goes out each Saturday to PAA District Traffic representatives in the U. S. A. and in the Americas. This report indicates if space is "excellent, good, fair, bad or impossible" on Pan American's *Western* and *Eastern Divisions*, Panagra's routes and Avianca flights. In addition, pertinent information is given on connecting U. S. domestic airlines and train space from the Texas, New Orleans and Florida international gateways.

Another service is a radio forecast 36 hours prior to departures of all flights, north or southbound, to all Divisional airports listing passengers holding reservations. This enables traffic representatives to notify travelers and in case of cancellations other passengers holding advance reservations or "shipside" may be accommodated.

Varying space allotments held by district offices in New York, Washington, Chicago, Houston and New Orleans to facilitate reservations from those points are released to the Central Control center in Brownsville when not required some 15 hours before flights leave the Texas Terminal. Likewise Pantra notifies Balboa when allotments on northbound planes are open. Recently, Pantra has alloted New Orleans two seats on Trip 501, from Guatemala to Central American capitals, for accommodating passengers from New Orleans arriving at Guatemala destined to some point in Central America, because the New Orleans flights stop only at Managua, Nicaragua, between Guatemala City and Balboa.

Wartime demand for passenger and cargo space has swamped Pantra during the past year with an average of more than 350 daily messages pouring into Brownsville. On a record day more than 600 were received. With a staff of 21 men and women clerks—triple the personnel employed at Central Control before Pearl Harbor—and a Divisional Reservations staff now totaling approximately 50, officials expect to maintain a peak of efficiency under the new system.

Revenue from 3-Cent Air Mail Would Cover Costs, Study Claims

The revenue derived from ordinary 3-cent mail is sufficient to cover the initial and terminal expenditures of the Post Office Department and the cost of air transportation for first class mail originating in most of the first and second class post offices in the United States, according to a study recently made by John Howard Payne of the American University.

The study emphasizes that two items of cost must be considered: (1) the initial and terminal expenses of the Post Office Department, which includes the cost of collecting, sorting, and delivering the mail to the transport terminal, the cost of distributing the mail after it has reached the transportation terminal nearest its destination as well as the overhead costs of maintaining Post Office buildings, salaries of postmasters and clerical help, and (2), the payments for transportation service between terminals. In 1939, it was estimated that 78.9 cents of every dollar spent for the collection, transportation and delivery of first class mail, including air mail, was spent for initial and terminal services; 21.2 cents was spent for transportation service.

There are approximately 45,000 post offices of all classes in the United States, about 10 percent of which are first and second class. However, the 4,700 first and second class offices originate over 88 percent of the ordinary first class mail. The postwar possibilities of air mail development can be envisioned if it is assumed that each of these first and second class offices is served directly by air, the study states. Not all of these post office cities and towns have adequate airport facilities, but those which do not can be included in such an air mail system by using a pick-up method, it adds.

Taking 1939 as characteristic of peacetime postal volume, the first and second class offices originated over 256 million pounds of first class mail, only a small percentage of which was carried by air. The study concludes that a small volume of mail moving by air will involve such high costs per unit of mail carried that the postage revenue may not cover the transportation and the post office initial and terminal expenditures. However, if the volume of traffic can be increased by removing the postage differential between first class and air mail, that is, by establishing 3-cent air mail, and by serving most of the first and second class post offices directly by air, the increased volume of traffic will reduce unit costs to the point where the postage revenue will cover the expenditures of the Post Office Department and no question of direct subsidy for air mail will be involved, it states.

It is shown that the deficits incurred by second, third and fourth class mail and most of the special services of the Post Office are offset by postage revenue derived from first class mail. However, the public pays a premium for the transportation and delivery of first class mail, and it should be entitled to special transportation service—air mail—if the revenue can cover the costs, the study claims.

Copies of "The Economies of Three-Cent Air Mail" are available from the American University, 19th & F Streets, N.W., Washington, D. C.; price $1.75.

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Building in unlimited quantities vital electrical and high frequency equipment—advancing engineering design—enlarging its manufacturing facilities—speeding production—Amphenol is producing to the utmost to meet today's urgent requirements. On this experience Amphenol Products will set new standards of performance, economy, and service in peacetime electronic applications.

OK METHODS

Ready for distribution now is the first issue of a new Amphenol booklet, OK METHODS—a 28-page illustrated manual which provides an exchange of ideas in wiring assembly. OK METHODS outlines tested procedure in assembly of wire and connectors—presents an easy means of instructing large groups of operators in standardized work procedure. OK METHODS is clearly written—profusely illustrated. Write for your copy today.

AMPHENOL CATALOG

Amphenol Catalog #70 is the leadership catalog of the industry. It covers A-N Connectors and other electrical equipment used on aircraft, radio, ships, and tanks. The listing includes charts and technical data on A-N and British Type Connectors, A-N Conduit, A-N Conduit Fittings, Low-Loss Connectors and Cables, Radio Parts and Accessories, Special Tools and Equipment, Synthetic Sheet Rod and Tubing.

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Industry's Scientific Groups Analyzed

Multitude of Professional Societies May Be Phase of Aviation's Adolescence, Foley Reasons

By E. J. FOLEY

A SIGNIFICANT ELEMENT in today's aviation industry is the professional organization. Many of these societies are scientific or technical in purpose; most are highly specialized and all appear to be riding high on the crest of aviation's highest wave. We are not out to argue for or against their development; however, as a whole, they represent an important group of the industry's most valuable people. Their futures are deserving of our attention.

Foley

One general, academic question which comes to mind is—How accurate an industry yardstick is the number of professional societies functioning in the field? The membership totals of the few old established societies strike us as another business measurement.

The growth of the aviation industry has made it *mature* in terms of business volume but *adolescent* in actual age. The multitude of professional organizations may be a phase of this youth—a passing peak period which will stabilize ultimately at a lower level. To assume that such a tapering off will work against the industry is not justified—nor is an assumption of the opposite. Let us simply outline a few of the pros and cons to see if any of them give us a clue to the future. We shall confine our thinking to the technical or engineering society since this type is predominant and most familiar to us.

The typical technical aviation society of recent vintage is restrictive in membership to individuals engaged in one specific phase of aviation engineering. Two advantages are inherent. The society serves to point up the collective prestige of the particular field and gives recognition to the individual participant. Secondly the organization provides an effective medium for the education and specialized development of younger men and for the interchange of ideas between all members.

Specialization: a Handicap

However, these advantages are not free and clear. The specialization can be a handicap to the group and to the industry. Too frequently, the individual *working* at his specialty sacrifices his perspective and his appreciation of the interdependence of his chosen phase and all the others. Adding the activity of a specialized "extra-curricular" organization can only aggravate this situation, as a rule.

The handicapping of the group frequently appears in attempts at activity advancing the art. We maintain that the Seal of Approval of the Society of Aeronautical Weight Engineers is an example. Here is a sincere specialist group representing a vital and extremely constructive force in the aircraft manufacturing industry. As a project for the Society, a Seal of Approval award procedure was developed and from time to time certain products are so honored.

Totally ignorant of the standards on which the awards are made, there are certain conclusions to be drawn. If only weight is considered, the significance is extremely limited. Who would buy a gadget just because it was the lightest made? Many of us have been trapped on this weight-saving business before. On the other hand, if the equally pertinent elements of strength, suitability, ease of maintenance, etc. are evaluated, the project is the immediate concern of others than the Society members and would seem the function of a more general group.

Without detracting in any way from the necessity for and value of specialization, we give recognition to the evil of actual or implied pitting of one specialized technical phase against another. The products of our aviation industry must continue to be best by any test and the way to do this is *not* by over-emphasis on any few technical phases.

'Profession Needs Prestige'

The technical journal and the periodic meetings of the society are two more very strong points in its favor. The journal rarely receives such a circulation as to make it a prestige-builder for the field. Its good is accomplished through education—both of the reader and the authors. Technical men have too long isolated themselves from the normal media of expression. Contributions to the society journals and by the spoken word at meetings can give the profession as a whole the prestige that its strenuous efforts and excellent workmanship deserve.

In our mind, the ultimate good will come from these two activities if they are frequently employed to open the doors between the society's specialty, the industry's product and the customer's need. If they are so used, they act as a centrifugal force opposing any tendency of the group to rotate rapidly within its sphere.

Every once in a while, we hear of a proposal, by a specialist society or by an individual protagonist of a branch of the industry, to inject a course or courses treating his specific phase of work into the curricula of our educational system. We automatically oppose any such move as shortsighted and contrary to the best interests of the industry. If such a plank is considered necessary to the platform of a specialist society, then we think this a distinct, dooming disadvantage.

Specialization is properly the job of industry or the trade school, not of our colleges. "Education" implies a "leading out" not the "drilling in" of specialty programs. The assurance of available engineering leadership can be eclipsed by too narrow a program. It is a shortsighted policy to accent the early usefulness of our engineers by specialty training and ignore the ultimate administrative needs which can best be provided for by a broad educational program built upon the fundamentals of the profession.

Today American industry is facing a reconversion period. The aircraft manufacturing industry looks to the day when much of its effort will have to be expended in new directions or else it may go altogether unemployed. We feel sure that this necessary search in *new directions* will provide many new lessons for the aircraft industry; we can rarely be exposed to the processes and practices of another field without accumulating knowledge of value to our own efforts.

This then is a helpful service, a potential advantage of the professional organization: the familiarization of its membership with the other industries. It is a logical extension of the necessary practice of picturing all other phases of our own industry.

To make our presentation even marginally adequate, we must touch on the most prominent if intangible advantage of the societies—the development of personal social contacts through the get-together of the group. We have labeled this an *advantage*. If it must be called one or the other, we believe that most will agree with us that it adds more than it distracts—to paraphrase.

The development of the industry even shortens the leisure of many of its personnel. A few hours with fellow participants does not accent one's problems but can often offer a solution. Unfortunately this advantage is one which is susceptible to abuse. Overdone, it can dominate the individual members and even the entire organization to the point where "social fraternity" describes the entire endeavor.

'Businesses in Themselves'

We have not intentionally taken sides on this issue. We have simply attempted to expose a few pros and cons on the subject of business organizations, which we feel are a vital part of today's aviation industry. The history of these organizations in the main we believe to be parallel to the industries with which they are allied. The larger groups and to a slightly lesser extent the smaller, are businesses in themselves—selling their memberships and attempting to keep them sold.

They should be concerned for their future and planning in so far as possible for the provision of the most effective and attractive agendas for tomorrow. By so doing they may be able to modify to a degree their direct dependence upon the state of the industry.

There are doubtless several organization officers and organization members who are reading these comments. We wonder how you feel about the subject and what you feel should be the trend of the future. If you are sincerely in disagreement with the things we have said, our policy guarantees space for your opposition. On the other hand, if you think we're on the right track, we're human and will appreciate your letting us know.

BLUEPRINTS OF SAFETY

HEADED FOR A HOTSPOT!

Looking for trouble...and knowing just where to find it...this sleek Consolidated Liberator is in capable hands...equipped with capable controls...ready to blast its target with cool precision. From take-off to landing, each man in her crew is spurred by one related thought...find it, bomb it, head for home. And working with them...matching their training and devotion to duty...is the superb performance and dependability of A. A. C. precision Hydraulic Units...transmitting the pilot's skill to the delicate operations of take-off, flying, landing. It is interesting to note that here again, as always, A. A. C. is manufacturing Hydraulic Control Units to the exacting specifications demanded by "Blueprints of Safety."

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AIRCRAFT ACCESSORIES CORPORATION

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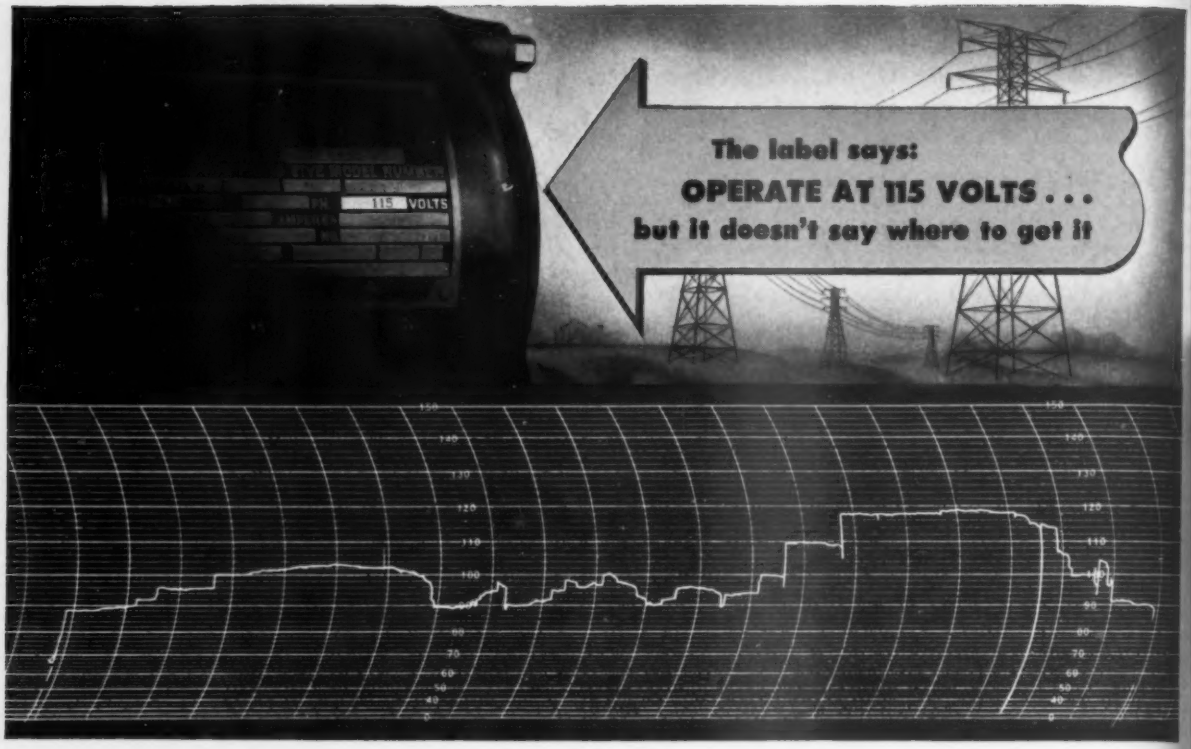

RATED VOLTAGE is always available to equipment protected with built-in CONSTANT VOLTAGE

"Operate at 115 volts" on the label of electrically operated precision equipment is not simply informative —*it's a warning!*

A *warning* that the device is too sensitive to tolerate the voltage fluctuations that may be met on America's power lines, and still perform with efficiency. A *warning* that sensitive tubes and other delicate mechanisms may be irreparably damaged by line surges and that costly replacements, with consequent loss of time and efficiency, lie ahead.

The design engineer who assumes that the precisely controlled voltages of the research laboratory will be duplicated in the field is heading his product toward trouble. Nominal line voltage ratings can no longer be used as single, stable reference points for design considerations. Commercial power lines are too heavily loaded and unpredictable.

"Operate at 115 volts" is no longer sufficient on a label. A guarantee that the "115 volts" will always be available, in spite of the unpredictable fluctuations of commercial power, is a prime requisite if the device is to perform with unfailing efficiency and precision.

The place to provide voltage control is within the equipment. With a Constant Voltage Transformer as a component part, the device is provided with a dependable source of voltage and unfailing protection against performance interference and construction damage.

SOLA Constant Voltage Transformers are available in sizes and capacities to meet design requirements of any electrically operated equipment or electronic device. Items so protected will deliver as efficiently in the field as under the most ideal laboratory conditions.

SOLA Constant Voltage Transformers have no moving parts to get out of order. There are no manual adjustments to be made. They perform instantly and automatically, maintaining output constant to within ± 1% of the rated voltage, regardless of line fluctuations as great as 30%.

Constant Voltage Transformers

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To Manufacturers:

Built-in voltage control guarantees the voltage called for on your label. Consult our engineers on details of design specifications.

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Transformers for: Constant Voltage • Cold Cathode Lighting • Mercury Lamps • Series Lighting • Fluorescent Lighting • X-Ray Equipment • Luminous Tube Signs Oil Burner Ignition • Radio • Power • Controls • Signal Systems • Door Bells and Chimes • etc. **SOLA ELECTRIC CO., 2525 Clybourn Ave., Chicago 14, Ill.**

G-E Lists Many Electrical Aids to Aviation in 1943

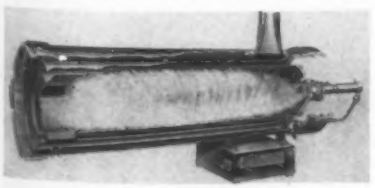
General Electric Co. lists refinements of the power-operated gun turret, the electro-hydraulic automatic pilot system, and developments in the design of turbo-superchargers among its contributions to aviation in 1943. G-E also points to its new ignition system for high-altitude operation, new large-capacity a-c generators, remote and locally operated circuit breakers, and automatic temperature controls for engine heads, oil coolers, and similar applications on large aircraft as among the year's accomplishments.

Capt. J. S. Evans, an inspector of Naval Material, goes over the automatic pilot with a G-E engineer.

"It is easy to appreciate the contributions the electrical industry is making in the advancement of aviation, both in devices for actuating parts of the plane and in controlling and operating its armament," said G-E's year-end review. "It is difficult, however, to tell the whole story today, for many of the devices are new and therefore not to be revealed. Without being too specific about the details, it can be said that precision of control, automatic operation, fire power, range, altitude, and speed of America's aircraft all were enhanced by the year's electrical developments."

'Whirl Flame' Heater

Surface Combustion, Cleveland, O., announces a new combustion-type high-altitude aircraft heater, known as "Janitrol," which "tremendous air pressures encountered in 700-mph plane dives fail to blow out." The company credits the heater's unique "whirl flame" principle

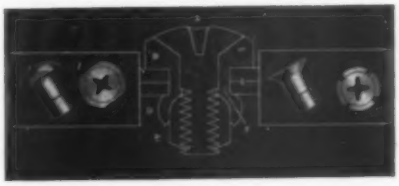


is responsible for the unit's ability to stay lit under extreme conditions. It is claimed to be the only heater in existence which has stayed lit at 37,500 feet.

Equipment News

Blind Fastener

Claiming the simplicity and reliability of the simple screw and nut, this Preco



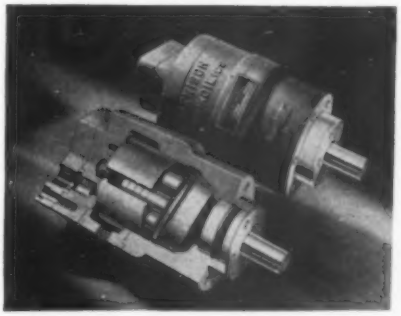
rivet is a blind fastener announced by the Pacific Railway Equipment Co., 960 E. 61st St., Los Angeles. The rivet is a combination of three parts, a steel, cadmium plated, recessed head screw inserted into the hollow stem of an aluminum alloy rivet and a knurled nut of Dural threaded on the end of the screw. The rivet is inserted and then tightened with a hand-ratchet or power screw driver.

Cabin-type Thermostat

This is the cabin-type thermostat, a development of the Barber-Colman Co., Rockford, Ill. Weighing 7 oz. and with a rating of 0.5 amps. at 24 v. d-c., the thermostat has a temperature sensitive element consisting of a bimetallic coil mounted on a flexing hinge. The entire assembly is spring suspended on a bakelite base and enclosed within a completely surrounding aluminum case which can be readily grounded. A rotating dial provides temperature setting and is visible through the front of the case.

Fluid Motor

The Denison Engineering Co., Columbus, Ohio, announces this HydrOILic Fluid Motor, a positive displacement unit with direct connection and constant contact between driving and driven elements. It is said that by simple valving of oil through the motor in greater or lesser



quantities, speed can be exactly regulated. Actual running torque is estimated at 95% of theoretical torque and stalled torque is 85% of running torque. The position of the motor has no effect upon efficiency, and face-plate, foot-plate and flange-type mountings are available. The axial piston design eliminates dead-center position and regardless of piston position on coming to rest, the motor starts immediately upon application of pressure. The MA-15-CP model, weighing 16.4 lbs. produces 15 lb. of torque per 100 lbs. line pressure at 100% efficiency.

'Hollo-Tech' Flooring

Technical Plywoods, Chicago, announces a new lightweight flooring for airplanes, which, the company states, "will be a big item in reconditioning large transport planes for commercial and cargo use after the war." The flooring, known as "Hollo-Tech," consists of a top surface of plywood, a bottom surface of plywood, and a core of spruce, made up of narrow grid strips.

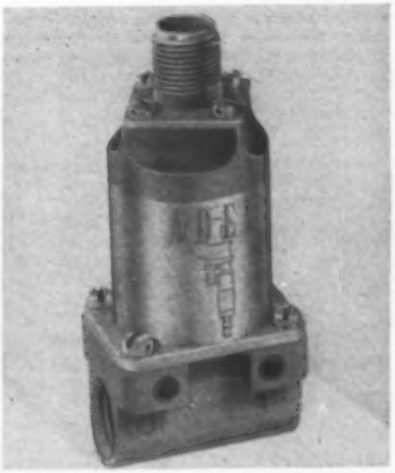
Pneumatic Collet

Mead Specialties Co., 15 S. Market St., Chicago 6 is the manufacturer of this new fixture, known as the Model C-18 Pneu-

matic Collet. Maximum capacity is 1" round, $2^{3}/_{32}$" square and $^{7}/_{8}$" hex. Depth stop is provided by a hollow ram through which a depth rod of required length rests on the machine table free of moving parts

Shut-Off Valve

This is a solenoid operated fluid shut-off valve, weighing 6.96 oz., the product of Adel Precision Products, 10777 Van Owen St., Burbank, Cal. The valve has a dural



body is equipped with standard AN 3102-8S-1P receptacle and may be had in port sizes for $^{1}/_{8}$" pipe or $^{1}/_{4}$" tube fittings. Valve is normally closed and installation might be planned for any operating position. Current is .25 amps. 4 v. d-c. Units are available for working pressures of 50 and 250 psi.

Industry Confident of Meeting '44 Goal

Production Review for 1943 Shows Aircraft Plants Making Remarkable Records

WITH a total production of 85,946 airplanes in 1943, the aircraft industry faced confidently General H. H. Arnold's plea for 145,000 planes in the next 15 months. More significant than the doubling of 1942's total was the virtual tripling of the volume of production by weight. Totals achieved in November and December were equal to an annual rate of 105,000 planes.

If the industry had continued producing planes of the 1941 average size, said the Aeronautical Chamber of Commerce, poundage production in 1943 would have been equivalent to 155,000 planes. Between 1941 and 1943 poundage produced increased from 83,500,000 to 276,000,000 to 667,000,000; numbers of planes from 19,403 to 47,694 to 85,946. Dollar value of airframes, engines and propellers produced increased from $1,750,000,000 in 1941 to an estimated $11,000,000,000 in 1943.

These increases in production were achieved, according to the Chamber, with only a 50% enlargement of plant area and 45% in employes. Total employes in airframe, engine and propeller plants is now estimated at 1,400,000 of whom 40% are women. There were 423,000 at the end of 1941.

The seven major West Coast plants contributed 282,900,000 pounds of the total national figure for the year, which represents a gain of 72.3% over 1942. They produced about 26,636 planes in 1943 against 17,694 the preceding year and totalled 60% of the nation's heavy bomber production.

Members of the East Coast Aircraft War Production Council report a combined total of 24,566 planes for the year, weighing, with spares, in excess of 180,000,000. This represents an increase of 105% in unit production and about 184% in airframe weight over 1942. During the last four months of 1943, the council companies delivered an estimated 77,500,000 pounds of airplanes and spare parts compared to 64,227,000 during the entire year of 1942. Similarly more planes were built from mid-August until year's end than in 1942.

Despite the vast expansion in aircraft production demanded of the industry during 1943, there were some cutbacks in non-combat and outmoded combat types. The Navy Department revealed that its cutbacks in aircraft during the past six months amounted to $226,000,000, directed principally at trainers, transports, lighter-than-air craft, gliders, outmoded patrol bombers and scout observation planes.

"Cutbacks in naval aircraft," an OWI report stated, "are simply a limitation of non-combat and outmoded combat types to clear production lines for more advanced fighters and bombers—a trend shared also by the Army. Almost complete elimination of the glider program resulted from the fact that these towcraft have proved to be unsatisfactory weapons from the standpoint of naval strategy. The reduction in lighter-than-air craft became possible as the Nazi U-boat menace diminished.

"At the same time that certain types of naval aircraft are being cut back, heavy expansion in fighter and bomber output is projected for 1944—a jump of 60% more than 1943, reaching a total of $4,000,000,000 by the end of the year." The Navy also stated that it was increasing the dollar volume of both plane and ship construction by the same amount—$1,500,000 (an increase of only 23% for shipbuilding.)

But, though the aircraft industry will be in the foreground in all "thinking and policy making" on cutbacks and reconversion, "in all probability it will be devoted 100% to war production through the entire year," Ernest R. Breech, President of Bendix Aviation Corp. warned. Pointing out the increases of 325% in tonnage output and 300,000 in manpower employed scheduled for 1944, he said the "American aviation industry is destined for a feature role in 1944."

President L. C. Goad, of the East Coast Council said its contribution to the 145,000 planes asked for by General Arnold "will mean building approximately 43,000 airplanes weighing about 120,000 tons. That will mean doing in the next 15 months about what we have done in the last two years." Nationally the necessary increase will be similar, since the combat ships produced from July, 1940 to December, 1943 totaled about 157,000.

On the West Coast, the goal for 1944 is more than 225,000 tons of warplanes, half again more planes by weight than in 1943. The only cutbacks which can be foreseen projected for the year are possibilities in engines and in aircraft ordnance where stockpiles of most types are rapidly being accumulated.

The following information on production records during 1943 has been reported by individual companies:

Beech Aircraft Corp., value of deliveries for year ending Sept. 30, 1943 doubled that of preceding year and was more than 15 times that of fiscal 1941.

Bell Aircraft Corp., Marietta, Ga., plant, exceeded production schedules for B-29 in December.

Boeing Aircraft Co., production of Flying Fortress was 146% higher than 1942; December production was 92% higher than Jan., 1943; manhours per plane are one-third of number required in December, 1941; production of B-29s will reach "full quantity" in 1944.

Consolidated Vultee Aircraft Corp., production in 1943 totaled 126,000,000 pounds compared with 53,000,000 in 1942; company has average production of 8.3 pounds per man per hour compared to 4.8 pounds the industry average.

Curtiss-Wright Corp., 26 times as many planes, engines and propellers were produced during first 11 months of 1943 as in same period of 1939; C-W Airplane Div. manufactured 40,353,352 pounds of airframes and spare parts an increase of 58% over 1942; Wright Aeronautical Corp. increased horsepower volume production of engines 36.6 times over December, 1941. Propeller Division showed increase of 50% over 1942 output; during 1944, output of Cyclone 18 engine will be 750% higher than in 1943.

Douglas Aircraft Co., in 1943, 96,446,000 pounds of combat planes were produced, exceeding 1942 output by 204% and equaling over 16% by weight of national total; direct man-hours per plane unit were reduced more than 50%; commitments for 1944 require increases of 86.4% over 1943; production of Flying Fortresses more than met scheduled Army requirements.

Fairchild Aircraft & Engine Corp., Burlington, N. C. plant, met scheduled aircraft production quota for December.

Grumman Aircraft Engineering Corp. since Pearl Harbor 6,249 airplanes of all types were produced, 2,291 of them Avengers; increased production of Hellcats from 12 in January to about 450 in December.

General Motors Corp., Buick Division: deliveries of Pratt & Whitney twin-row wasp engines totalled 24,626 in 1943 or over 29,500,000 hp. compared to 8,401 or about 10,000,000; substantially higher production is scheduled in 1944.

McDonnell Aircraft Corp., production increased more than 100% in 1943, or about 1,737,000 pounds of airframe compared to 847,000 pounds in 1942.

Republic Aviation Corp., yearly production quota of P-47 Thunderbolts was met Dec. 30.

Studebaker Corp., produced 22,925 Wright Cyclone engines or 3½ times the total produced in 1942.

Waco Aircraft Company, production of aircraft parts and large gliders more than tripled that of 1942.

Service

Every woman employe in the Los Angeles and Phoenix divisions of AiResearch Manufacturing Co. with a husband, brother, or son in any branch of the service, was photographed, at company expense, so that she might send her relative the picture for Christmas and show him how she was helping to win the war at home. The company's photographic department took 645 pictures on three different shifts in two different plants, during two days of normal war production, without the loss of a man hour.

Los Angeles Honors Kindelberger

The Los Angeles Chamber of Commerce recently sponsored a luncheon honoring J. H. "Dutch" Kindelberger on his 25th anniversary in the aircraft industry. Presidents of Southern California aircraft plants and ranking Army and Navy officers stationed on the West Coast attended the function.

Proposal for Export Sales Corporation Given Industry

By BARBARA B. C. MCNAMEE

A PROPOSAL for the formation of a postwar export sales corporation has been submitted to aircraft manufacturers and is reported to be receiving favorable consideration, spokesmen indicated to *American Aviation*. Manufacturers of aircraft, engines and accessories would join forces, according to this plan, establishing a company to conduct export trade more economically and to exploit foreign markets more extensively than would be possible for each manufacturing concern individually.

The prospect of greatly diminished markets after the war, with a demand for aircraft reduced to perhaps as low as 2% of present production volume, is the major postwar problem for aircraft manufacturers. This new proposal is an attempt to meet the drastic reduction of domestic demands by cultivating and expanding overseas markets. Aimed at the medium-sized concerns which could not operate such a corporation individually it was prepared by Henry L. Knight, Washington aircraft counsel and formerly with the Aeronautical Chamber of Commerce.

Important factors favoring such a proposal, it was learned, are that restrictions against combinations in restraint of trade placed on domestic companies by the Sherman Anti-Trust and Clayton Acts are not applicable to associations "entered into for the sole purpose of engaging in export trade and actually engaged solely in such export trade." This provision was made in the Webb-Pomerene Act, Public Law No. 126, enacted in 1918 "to promote export trade." Such a combination is, however, required to abide by the fair practices regulations of the Federal Trade Commission, as are all exporters.

Advantages offered to the manufacturers by such a corporation appear to be that it could deal more effectively with large foreign buying combines, offering a broader supply of aeronautical goods than a small or medium-sized manufacturing concern would offer by itself. Through combination, it would be possible to expand the range and volume of international markets and to participate in cartels if such action is necessitated in the post-war period. The corporation would have legal power under the Webb-Pomerene Act to fix prices on competitive articles for export of its members in order to eliminate "cut-throat" competition although this power would be exercised, according to the proposal, only with the consent of all members.

It is believed that several economies might be effected by the corporation in sales costs, in better freight rates by consolidation of shipments and in the reduction of storage and warehousing costs abroad. A single international sales organization could handle all foreign advertising, probably at lower rates through volume buying and at the same time could collect trade information for the benefit of its members.

The corporation might also provide an effective medium for the disposition of surplus war materials, if these are returned to the manufacturers on consignment as has been proposed. By distribution of military equivalents of civilian aircraft in new or existing international markets through an export sales company, manufacturers could preserve the domestic market for new manufacturing.

Although the corporation is still in the "discussion stage," it is understood that a number of manufacturers have already signified their interest in participating.

APMA Asks Same Wage Rates For Technicians as in SCAI

The same job evaluations and wage rates that were established for the California airframe industry have been requested for technical and office workers in aircraft parts plants that are members of Aircraft Parts Manufacturers Association. The Tenth Regional War Labor Board was petitioned by the Board of Directors of the Parts Association through T. T. Arden, president.

If adopted, this plan would establish rates for technical and office workers ranging from 75 to 80 cents an hour for messengers and typists to $1.40-$1.75 for tool designers. In the intermediate range, chief clerks receive $1.10-$1.30 and stenographers 85 cents to $1.10.

10,000th Plane

Recent delivery to the Army Air Forces of Consolidated Vultee Aircraft Corporation's 10,000th basic trainer marked the first time in the nation's aircraft history that 10,000 planes of one model have been built within the walls of a single factory. The planes were turned out at the Vultee Field plant, Downey, Cal.

Dean Smith, Famous Flier On Byrd Expedition, Joins Fairchild Executive Staff

Dean C. Smith, veteran pilot, explorer, and aviation sales director, has joined the executive staff of Fairchild Engine and Airplane Corp. as director of development activities. For the past several years, Smith has been director of transport for the airplane division of Curtiss-Wright Corp. He was formerly sales manager of C-W's St. Louis airplane division.

Smith

Smith went with Admiral Byrd on his first expedition to the Antarctic in 1928. He was awarded the Congressional Gold Medal for his services with Byrd. He also is holder of the Distinguished Flying Cross and the Harmon Trophy.

Nash-Kelvinator Report for '43

Output of 2,000 hp two-stage supercharged Pratt & Whitney aircraft engines at Nash-Kelvinator's plant in Kenosha, Wis., increased in 1943 to an extent requiring more than $1,000,000 for additional test cells. Production of these engines at the Milwaukee plant continued to mount, the company reported. During the year, the two Nash-Kelvinator plants at Lansing, Mich., plus the plant at Grand Rapids—which constitute the propeller division—were awarded the Army-Navy "E" for outstanding war production. During the latter half of 1943, the company's engineers and technicians have been busy readying production facilities for building the United Aircraft-Sikorsky R-6 helicopters for the Army Air Forces.

Gen. Marshall Visits Douglas Plant

The Army Chief of Staff makes an inspection of Douglas Aircraft Company's Long Beach, Calif., plant. Left to right—George R. Tulloch, assistant plant manager; Gen. Marshall, Donald W. Douglas, and Maj. Gen. T. T. Handy, assistant chief of staff, Operations Division, War Department General Staff.

Fixed-Wing Type Seen Dominating Postwar Private Airplane Field

THE FIXED-WING type of plane will dominate the private airplane field in the period immediately following the war, William D. Hall, chief engineer of Aeronca Aircraft Corp., declared in an address this week before the War Engineering meeting of the Society of Automotive Engineers in Detroit.

"Although considerable publicity has been given the recent advances of the helicopter, I feel that this craft is still a long way from offering the best compromise from the standpoint of the private owner," he said.

Hall listed the types of plane which, in his opinion, will be offered to the postwar public. They are:

1. A low powered, inexpensive training type, with either tandem or side-by-side seating arrangement, which will be a refined version of the prewar light airplane models. ("This airplane will sell at approximately $1,000, and in order to meet this cost, will consist of the minimum amount of aircraft that will satisfactorily fly.")
2. A medium priced, medium performance type aircraft which will be super-safe, and aimed at the private owner, and will be available in two-place, and four or five-place models. ("The two-place version will list at approximately $1,500, and the larger ships at approximately $3,000.")
3. An aircraft combining as high performance as consistent with reasonable safety, comfort, and cost—a "cleaned-up" version of the prewar two-place, side-by-side, low wing, retractible gear type. ("This plane will be available at approximately $2,000.")

Hall stressed the fact that the prices he mentioned "are going to be very hard to meet, but a careful study leads us to believe that they are not out of line."

"Approximately 55.2% of the airplane manufacturer's cost is beyond his control in the form of purchased equipment and material, and since this percentage is more than half the total amount allowed the manufacturer, he has two strikes against him at the start unless he can obtain the cooperation of his suppliers," he said. "Our postwar aircraft will be designed with the initial cost controlled as rigidly as other factors have been in the past. Further, aircraft models will be carried over from year to year, with minor changes, to amortize the high development and tooling costs, which will be necessary to start out with a reasonable price."

Hall admitted that the big disadvantage in owning a private airplane is upkeep. He pointed out that although any one of the two-place planes listed by him will get 17 to 18 miles per gallon at cruising speed, the indirect cost of $15. per month hangar rent, 10% of the airplane list price per year for insurance, and maintenance work "which must be done by licensed mechanics," swells the owner's out-of-the-pocket expenses once he has purchased a plane. He anticipates the following postwar developments in decreasing upkeep costs:

1. Hangars with $5 to $8 monthly rentals.
2. Decreased insurance rates as safer planes are built.
3. Decreased maintenance costs due to the large number of trained aircraft mechanics who will return from the war and the increased number of aircraft in operation.
4. Less need for maintenance as postwar aircraft will be built out of more durable materials than the steel tube and fabric in use at present on inexpensive craft, and consequently will not often break down.

In a discussion of postwar safety features, Hall listed spin-proof, spin-resistent designing as the most important development to be expected. He cited statistics of the Civil Aeronautics Administration as proof that the majority of airplane accidents have occurred from loss of control in the form of a stall, followed by a spin. He anticipates non-spinning will be accomplished as follows:

"The wing proper will be designed so that it stalls gradually with the stall originating over the center portion of the wing, and the ailerons used will not stall the remainder of the wing when they are deflected to obtain lateral control. Further longitudinal control will be limited so that it will be impossible to place the airplane in a complete stall position without a dive and a violent pull-up. An automatic warning of the impending stall in the form of tail buffeting, or perhaps an instrument on the dash board, will be included for the benefit of the individual who might occasionally become careless.

Other postwar private plane developments foreseen by Hall are air-conditioning, sound-proofing, exhaust muffling, and elimination of vibration. He foresees cruising speeds of 100 to 120 mph in the lower priced models, with landing and take-off speeds of 40 to 50 mph. He also predicts that the ratio of planes with respect to the number of airports will increase after the war with such rapidity that cow pastures and flight strips will be pressed into use.

"Since this type of airport will require cross wind take-offs and landings, tricycle landing gears will become popular," he asserted.

Sweet Adeline

Without interfering with production, Douglas Aircraft Company's Chicago plant sandwiched a 20-minute New Year's eve party into its schedule. A feature of the program was the singing of "Sweet Adeline" by four top executives—John Buckwalter, plant manager, and his assistants, Robert Dolan, James Farra, and Earl Neff.

West Coast Parts Concern Prepares to Tap Postwar Foreign Trade Markets

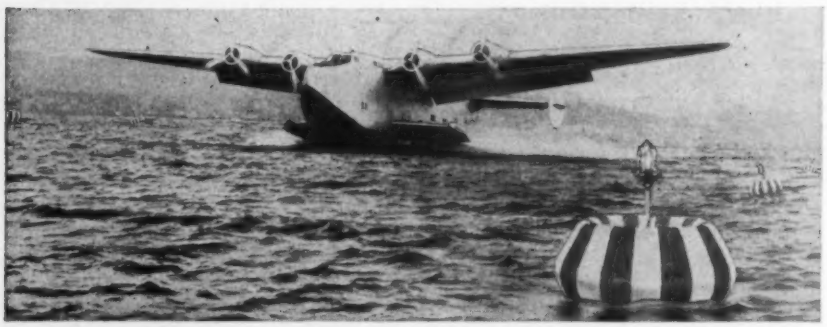
A major research and development program to tap the postwar foreign trade markets is being launched by American Screw Products, Los Angeles, which is supplying hydraulic fittings to all major airframe manufacturers. The company will contact 2,000 government agencies, manufacturers, wholesalers, importers, and airline operators in South America and Australia early this month.

A sample box of standard products to show quality of work performed in the company's machine shop and a letter asking what products are wanted in the post-war era will go to the foreign outlets.

As explained by Cathcart Jones, head of the development program, who formerly carried out trade research for both the British and Canadian governments: "We base our plans on what articles the foreign importer or wholesaler wants, not on what we decide they might want."

Lester and Alex Deutsch are owners of the plant which before the war specialized in non-standard parts for aircraft. Robert Cumins heads production; D. L. Bolwzer is chief engineer and David Herington, sales manager. A new hydraulics testing laboratory will further add to the company's equipment, directed by Claude Perrier, hydraulics engineer.

Aid Night Flight Operations



These unique seadrome markers have been developed by the Firestone Tire and Rubber Co. and the Westinghouse Electric and Manufacturing Co. They are said to be as steady as lamp posts and visible from three miles away. By using a secret frequency, lights on the markers may be turned on from a plane.

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Autogiro Company Claims U. S. Rights to Cierva Invention

THE AUTOGIRO COMPANY of America has filed an action in the U. S. District Court, Washington, D. C., asking a decree which will give the plaintiff, as assignee, a patent covering the invention of the autogiro by Juan de la Cierva. The suit is brought against John W. Dyer, David Kay and Kay Gyroplanes, Ltd., of Edinburgh, Scotland. who according to the Autogiro Company, hold a U. S. Patent which allegedly covers many of the Cierva principles of rotary wing propulsion.

In its complaint, the Autogiro Company asked the court to set aside the findings of the Examiner of Interferences and the Board of Appeals of the U. S. Patent Office wherein the defendants were awarded U. S. Patent No. 2,333,364. Plaintiff asks the court to decree that Cierva was the first, original and sole inventor of the autogiro represented by some 11 claims set forth in proceedings before the Examiner of Interferences and issue to it, as assignee of Cierva's application, Letters of Patent of the U. S.

The bill of complaint sets forth that on Jan. 15, 1936, "Cierva, of Spanish nationality, being the original, first and sole inventor of an aircraft with autorotative wings and methods of operating same filed application serial No. 59,292 for patent." The complaint discloses that on Jan. 3, 1936 Cierva had assigned to the plaintiff all right, title and interest in the invention and application.

On March 29, 1938 the Commissioner of Patents declared an interference between the application of Cierva and the application of the defendants Serial No. 33,396 which had been filed July 26, 1935, nearly six months before Cierva filed. The Dyer and Kay application was granted Nov. 2, 1943 and assigned to Kay Gyroplanes, Ltd.

The interference proceedings covered six counts involving some 11 claims. No testimony was taken on behalf of either party, both parties relying at the final hearing before the Examiner of Interferences on the disclosures and filing dates of certain co-pending U. S. applications and corresponding British applications as evidence.

The Examiner awarded priority of invention to Dyer and Kay and the Board of Appeals affirmed the Examiner's findings June 9, 1943. Plaintiff states that as a result of the decision of the Board of Appeals, the Commissioner of Patents erroneously refused to grant a patent to the Autogiro Company on the subject matter of said interference and has erroneously awarded a patent to defendant—the Kay Gyroplanes, Ltd. No appeal has been taken by the Autogiro Company to the Court of Customs and Patent Appeals, it was stated.

It is contended in the complaint that U. S. authorities were in error in following disclosures of the British patent to Cierva which was accepted and published on May 24, 1934, a copy of which was received by the U. S. Patent Office June 26, 1934 because certain of the counts raised do not involve invention under British procedure.

Two other claims are invalid and void in the Dyer and Kay patent, the plaintiff contends, because the subject matter of the claims and particularly the "device operative to effect an increase of blade pitch in a predetermined timed relation with disengagement of the clutch" is not disclosed in the defendants patent.

Plaintiffs are represented in Washington by Cushman, Darby and Cushman, the defendants by Edward R. Walton Jr. The case may go to trial sometime in February, it was stated.

New N. A. Comptroller

Hubert L. Howard has been named divisional comptroller for North American's Texas Division at Dallas. Company officials stated the appointment was necessitated by increasing financial responsibility at the plant, resulting from growth of the Texas organization and conversion from cost plus fixed fee contract to fixed price contract. With conversion of Texas plant, all North American factories are operating on fixed price contracts. The new comptroller was formerly chief accountant at Dallas, joining North American on March 28, 1942.

Studebaker Saves Man-Hours

Studebaker Corp. reports a saving of 40,000 man-hours per year in the production of Flying Fortress engines, resulting from an application of shaving machines to a 15-tooth pinion gear, which is carried in sets of 20 on each Wright Cyclone engine. A single worker on gear shavers can produce as many units as five on grinders, the company announces.

Cited for Production Idea

Clem J. Burkley, of Goodyear Tire and Rubber Co., has won an Individual Award from the WPB for his idea for an airplane tire that would grip the ice in Northern landing fields. He is shown with one of the ice-grip tires, which has small springs embedded in it in such a fashion as to cause points of the metal to protrude slightly.

Auto Parts Association Amends By-Laws to Accept Aviation Parts Members

Automotive Parts and Equipment Manufacturers, Inc., has changed its name to Automotive and Aviation Parts Manufacturers, Inc., and is accepting memberships from aviation parts companies.

"It is not our intention to serve as an industry association for the airframe group," said a recent letter to members from Frank Rising, general manager of the association. "Obviously, the airframe companies correspond, in the aircraft field, to the vehicle manufacturers in the automotive industry, and it is reasonable to assume that the airframe manufacturers have a greater community of interest in a separate association, just as the vehicle manufacturers have had a separate body in the Automobile Manufacturers' Association.

"There are many reasons why aircraft and automotive parts manufacturers have a real community of interest. In many instances, our members will make both automotive and aircraft parts in peacetime. In the main, labor problems, materials problems, manufacturing problems are very much the same."

Production at Beech Increased With Few New Plant Facilities

Beech Aircraft Corp. increased its volume of production in the fiscal year ended Sept. 30 without adding any substantial new facilities, the company's annual report reveals. The report announced the setting up of a wholly-owned subsidiary on Dec. 4, known as Material Distributors Inc., to facilitate disposal of materials rendered surplus or obsolete by reason of the completion, termination, or modification of government contracts.

After negotiated refunds and provision for additional refunds for the fiscal year 1943 totaling $29,534,438, sales amounted to $97,043,946. Cost of sales was $78,651,672, leaving net sales of $18,392,274. After selling, general and administrative expenses, interest, amortization of emergency facilities, income and excess profits taxes, etc., the company reported a net income to earned surplus, of $4,035,963, equal to $10.08 per share on the 400,000 shares of common capital stock outstanding. In the previous fiscal year, final net income after renegotiation refunds settled last September, amounted to $1,802,960, equal to $4.50 per share on 400,000 shares. The total amount paid to the Government for taxes and renegotiation in 1942 fiscal year amounted to $14,319,248.

As regards the provision for refund on Government contracts for the fiscal year 1943, amounting to $29,534,438, the report points out that this figure represents the management's idea of a fair figure for a renegotiation refund, but that no agreement has been reached with the Price Adjustment Board, hence the figure cannot be considered as final in any way.

It Took a "Softie" To Absorb This Beating

AIRPLANE engines perform their miracles under brutal punishment. Enormous power must be concentrated in engines no bigger than your dining room table . . . engines that must develop one lusty horsepower for each cubic inch of cylinder area, yet weigh only one wee pound for each horsepower. Terrific impacts, loads and pressures tax the endurance of every part . . . four tons pressure per square inch of connecting rod surface area, just to mention one example. Bearing metals must have what it takes to withstand constant acceleration of incessant pounding and flexing wear at thousands of revolutions per minute.

Most metals cannot take it. Design engineers were stumped for a while to find the bearing metal that could stand up under such punishment. Then along came silver —"softie" of the ages, jeweler's pet and whipping boy for the monetary experts—silver, pegged in price and stored in vaults.

Silver turned out to be the toughest fighter of the lot. Silver, applied by the Mallosil* Process to Mallory Bearings, not only has the strength and endurance, but the anti-friction characteristics to absorb the worst beatings that air fighting can inflict on engines.

Today, almost every high output warplane engine relies on silver bearings for engine, reduction gear and supercharger bearings. Silver-bonded bearings, virtually nonexistent two years ago, now account for approaching 25% of the world's silver output. Mallory Bearings have won their spurs for dependability, longer wear, closer tolerances and the ability to take it under the most exacting conditions. Mallory engineering is regarded as the most advanced in new bearing techniques and engine makers look to Mallory facilities, expanded over and over again by War necessity, as reliable sources of supply.

Naturally, Mallory Bearings will be a great boon to postwar commercial aviation. But this is only one phase of the development. Wherever heavy duty, precision bearings are essential for improved engine performance—on the road, in plant and factory or elsewhere—Mallory Bearings have much to offer to design engineers, planning for the future.

Although Mallory Bearing production is concentrated on War effort, we shall be glad to consult on your problems and applications for the peace-time economy.

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Manufacturing Personnel

Hynd

Bush

Republic Aviation Corp. announces the appointment of **J. E. Duffield, Jr.**, as advertising manager in charge of public relations. He will continue as supervisor of motion picture development for the firm.

Marshall-Eclipse division of Bendix Aviation Corp. announces that **Frederic C. Weyburne** has been named general manager, succeeding **Furber Marshall**, who has resigned to become president of the Pharis Tire and Rubber Co., Newark, O.

H. E. Van Petten has been appointed manager of the B. F. Goodrich Company's advertising division.

Stuart Betsinger has been named sales manager of Kinney Aluminum Co., Los Angeles.

Goodyear Tire and Rubber Co. announces that **Carl Alger**, sales representative for 15 years, has been appointed West Coast aircraft representative with headquarters in Los Angeles.

Arthur S. Brown has been named sales manager of Scott Aviation Corp., Lancaster, N. Y., manufacturers of aircraft accessories and high altitude oxygen equipment.

American Aviation Corp. announces appointment of **H. R. Carlson** as vice president and assistant general manager. Carlson was formerly general manager of the Toronto Shipbuilding Co.

Ralph M. Swenson has been elected secretary of Chandler-Evans Corp., succeeding **George H. Day**, who continues as a director.

North American Aviation announces three organizational changes: **H. V. Schwalenberg**, formerly factory manager of the Kansas Division, has been appointed director of quality control on the general offices staff; **Harold R. Raynor**, formerly assistant manufacturing manager on the general offices staff, has been named factory manager of the Kansas Division; **Robert McCulloch**, formerly director of quality control, has been appointed assistant general manufacturing manager on the general offices staff.

Lloyd Van Ness, head of the disposal system of Curtiss-Wright Corporation's Caldwell, N. J., plant, is reported to have worked 1,000 days without an absence.

Weyburne

Duffield

Evans

Wilcox

Darrow

Maharry

Betsinger

Alger

Proven

Maw

Douglas Aircraft Co. announces promotion of **Earl T. Bush** to supervisor of field operations. He has been supervisor of the engine department since 19[illegible]. **Harold G. Hynd**, formerly assistant superintendent of the Santa Monica plant, has been appointed manager of the Douglas modification center at Oklahoma City.

C. Douglas Maw, formerly resident manager of the Hemet, Calif., base of the Ryan School of Aeronautics, has been transferred to Tucson, Ariz., to become manager there. He is being replaced by **Paul Wilcox**, formerly civilian director of flying at Hemet. **C. W. "Bill" Evans**, formerly a group commander at Hemet, moves up to Wilcox's former position as wing commander.

Sterling Tool Products Co. announces the appointment of **J. A. Proven** as general sales manager. He was formerly western regional manager in Victor Adding Machine Company's Los Angeles office.

R. W. Darrow, former public and internal relations manager of the Columbus, O., warplane plant of Curtis-Wright Corp., has been named assistant director of public and industrial relations for the organization's entire Airplane Division with headquarters in Buffalo. He will be succeeded in Columbus by **W. A. Maharry**, former executive secretary of the Zanesville, O., chamber of commerce, who joined the Columbus plant's public relations staff last April.

John Splain, former New York commissioner of motor vehicles, has assumed his new duties as director of purchases for Hub Industries, Inc.

Stephen E. Fitzgerald has resigned from the Office of War Information to become public relations director of Bell Aircraft Corp.

(Turn to page 90)

Liberty Aircraft Service Tools and Test

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FREE ENLARGEMENTS (14" wide) of this cartoon by Edmund Duffy, twice winner of the Pulitzer Prize, are available. Write, on your business letterhead, to: Bruce Livie, President, Liberty Motors & Engineering Corp., Baltimore-1, Md.
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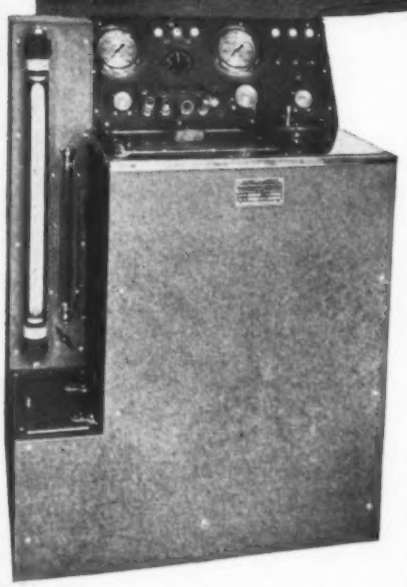


Tests and Calibrates all Types of Propeller Governors

Easily . . Completely . . Accurately

This Liberty Test Unit (Type 102) tests and calibrates all functions of aircraft propeller governors of all types. It checks the governing range, governor sensitivity and response . . . tests the relief valve pressure setting and pressure cut-out switch operation of Hamilton Standard governors . . . makes internal leakage measurements and burst pressure tests. Mounted on heavy casters, readily portable about the shop. Used by U. S. Navy, British Government and aircraft manufacturers. Write for complete information.

LIBERTY MOTORS
& ENGINEERING CORPORATION
BALTIMORE-1, MARYLAND

MANUFACTURERS OF AIRCRAFT SERVICE TOOLS AND TEST EQUIPMENT

Copyright 1943, Liberty Motors & Eng. Corp.

For Victory! . . . Excel-So is helping guard the Fuel Lines on American Home & Foreign Fronts

WATER-FREE GASOLINE

Firsts

IN AVIATION

THE LEWIS EXCEL-SO WATER SEPARATOR

Men who know fuels from the ground up designed and built Today's outstanding fueling unit for American and Foreign airports, portable pipelines, truck loading racks and refueling trucks . . . ***the Excel-So Water Separator that means so much to pilots, for water-free gasoline insures safe take-offs and worry-free water problems while in the air.***

Excel-So was first to deliver gasoline containing not more than 1/100 of 1% of undissolved water, where abnormally high percentages of water, free or emulsified, were involved.

Excel-So is the only separator to guarantee delivering gasoline containing not more than 1/500 of 1% of water, free or emulsified.

Excel-So is the only separator that delivers gasoline 99.999% water-free, proven by tests in collaboration with Government testing engineers.

Excel-So is first to introduce the dual principle of coalescing and settling of emulsified water in gasoline. Most separators rely solely on the settling chamber.

Such high efficiency of water removal by Excel-So cannot be approached by any other type unit!

Simple in design . . . employing no moving parts . . . dependable automatic features and equipped with a scientifically designed coalescing and filtering media . . . Excel-So Separators are not only establishing new records in delivering water-free gasoline, but new standards in gasoline free of silt, rust, muck, etc., to planes, refueling trucks, pipe lines, mobile equipment, tankers, carriers, tenders and other craft and motorized equipment.

Built in sizes from 25 to 1000 gpm at new low pressure differentials, Excel-So Separators can be used on all existing fueling systems.

Excel-So Separators are also designed and built ***to handle Diesel fuels and kerosene.***

All features in Excel-So Separators—design, operating and processes of degumming filter media—are covered by patent applications.

When writing for special requirements covering your water separation problems, please give actual operating pressure, maximum and minimum rates of gasoline flow, approximate amount of water to be removed and current characteristics of pump motors and available current for electronic control.

WARNER LEWIS COMPANY

710 14th Street, N.W., Washington, D. C.

Telephone: District 8585

Self-Starting Tire Unveiled

With "wings of its own" built into the sidewall, B. F. Goodrich Company's self-starting tire, which starts spinning before plane lands, is displayed by its builders, left to right: W. H. Elliott, R. W. Hursh, and Henry Schippel.

Use Time Studies In Developing Wage Plans—Nickerson

Incentive wage plans in the aircraft industry tend to be based on over-all plant estimates rather than on scientific time studies, John W. Nickerson, director of the War Production Board's Management Consultant Division, believes. In his opinion, however, production standards should be developed from detailed time studies to attain the maximum in production.

"Incentive wage plans show an increase in productivity up to 58% in cases where standards are set on an individual basis by use of time study," he told the American Society of Mechanical Engineers. "Demands for immedate increases in production make it impractical sometimes to wait for scientifically established standards; in such cases, all-over plant incentives based on past performance may prove effective."

He urged that these be replaced by more scientific studies at the first opportunity.

Nickerson stated that an analysis of 234 cases approved by New York, Cleveland and Chicago regional boards revealed: 29.5% used time studies to develop the standard; 4.7% used the ratio of labor costs to sales volume and 65.8% used past performance. Individuals were covered by 98 plans; groups by 96; 36 were plant-wide and four for indirect workers.

Most recent aircraft incentive wage plan to be approved by the War Labor Board was for Chance Vought Division of United Aircraft. This plan is plant-wide with a standard set by past performance.

West Coast Plants Report Savings in Salvage Drives

Salvage operations in West Coast aircraft factories range from metals to paper and represent a yearly savings in millions of dollars, a survey of representative plants discloses.

At Douglas, a typical month's scrap collection represents a million pounds. More than 118,000,000 rivets are saved in a year's time, enough to build 400 bombers.

Vega estimates that the value of material reclaimed, which is either returned to production or sold, at $1,355,000 annually. Lockheed salvages over 45,000 separate items.

At Ryan Aeronautical Company, San Diego, used engine oil from airplanes formerly sold at six cents per gallon. Now it is used as lubricating oil for plant equipment, replacing another lubricant which cost the company 32 cents a gallon. Wooden boxes delivered to the plant from outside vendors have given Ryan carpenters many thousands of usable board feet.

Eighty per cent of "lost" rivets, 75 per cent of the screws, bolts and nuts, 98 per cent of the skin fasteners are recovered from sweepings at North American. The company saves 80 per cent of all used run-in oil and 1000 gallons monthly of cutting oils used in the machine shop.

The paper conservation program at Vultee field division of Consolidated-Vultee centers around a paper chewer, a machine which chews up 270 blueprints a day, along with large quantities of other paper scrap. The chopped up blueprints go back to the manufacturer for reprocessing, while some of the other paper is used for packing.

Among the other thousands of items saved and put into use again are scraps of lucite and plexiglass to be used by novelty manufacturers. Sawdust from the mill and woodworking departments is turned over to other industries for such uses as sweeping compounds, bonds for adobe bricks, and briquets for fuel.

Statistics on Incentive Plans Recently Applied in the Aircraft Industry:

Product	Type of Plan	Method of Setting Standard	% of Increase in Production Above Standard	% of Increase in Production Above Past Performance
Aircraft parts	Individual	Time Study	15	73
Stop nuts	Individual	Time Study	11	24
Plastics	Individual	Time Study	20	44
Aircraft equipment	Individual	Time Study	24	47
Aircraft bearings	Individual	Time Study	13	41
Aircraft instruments	Group	Time Study	8	14
Aircraft pressure fittings	Group	Time Study	11	32
Aircraft motors	Group	Time Study	0	0
Aircraft instruments	Group	Past Performance	98	98
Aluminum castings	Group	Past Performance	13	13
Parachutes	Plantwide	Past Performance	15	15
Rug cushions for aircraft	Plantwide	Past Performance	15	15

Gas attack on "gas" fires

ASBESTOS-clad men on airfield crash trucks carry Kidde Fire Extinguishers. Turned against gasoline fires, the carbon dioxide roars out as a gas, expanded 450 times in volume. It quickly shuts off the supply of oxygen around the blaze, choking the fire to death. It's the same principle used by pilots to blast out fire in fighting planes.

Fire-fighting is only one of the important aviation jobs being done by gases-under-pressure. These gases, harnessed by Walter Kidde & Company, are serving as emergency power for brakes, landing gear, bomb-bay doors. In a crash landing, Kidde equipment can automatically discharge all fire-fighting apparatus and shut off the ignition.

If you have a problem involving stored energy, gases-under-pressure may be the solution. Let our Research and Development Department help you work it out.

Kidde

WALTER KIDDE & COMPANY, INC., 113 MAIN STREET, BELLEVILLE, N. J.

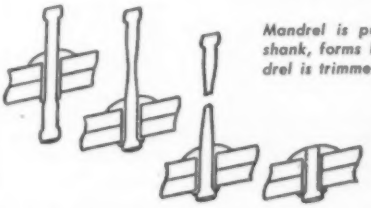
HOW TO HEAD A RIVET IN A TUBE

CHERRY BLIND RIVETS

CHERRY BLIND RIVETS are ideal for riveting tubing to elbows, brackets or other tubing. Here, short length Cherry Rivets are headed on the inside of the tubing.

The Cherry Rivet is a mechanical blind rivet headed by means of a mandrel passing through it. A gun exerts a pulling force on the mandrel, expands the shank of the rivet and forms a tulip head on the blind side, the head on outside conforming to the radius of tube.

If you need to speed up war jobs or are planning new products, get the complete story on Cherry Rivets now. See how they will save time and money. Give you a better job in many types of applications.



Mandrel is pulled into rivet, expands shank, forms head on blind side. Mandrel is trimmed flush.

GET NEW HANDBOOK. See how Cherry Rivets have been proved in aircraft. Write to Department A-111, Cherry Rivet Company, 231 Winston Street, Los Angeles 13, California.

Cherry Rivets, their manufacture and application are covered by U. S. Patents issued and pending

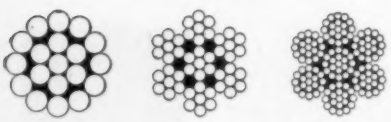
Cherry Rivet Company
LOS ANGELES, CALIFORNIA

All Macwhyte aircraft products are made to conform to A-N specifications...including:

"SAFE-LOCK" TERMINALS
... in eye end, turnbuckle end, stud end, and fork end.

AIRCRAFT SLINGS
...custom-built for your work. Both standard wire rope and braided slings available.

TIE-RODS
...for internal and external bracing. Streamline, square, round.



NO. 6818-A

MACWHYTE COMPANY
2953 Fourteenth Avenue
Kenosha, Wisconsin
Manufacturers of MACWHYTE "Hi-Fatigue" Aircraft Cable—"Safe-Lock" Cable Terminals—Aircraft Tie-Rods—Braided Wire Rope Slings—and Wire Rope for all requirements.

West Coast Takes Plants to Employes

One reason why the West Coast aircraft industry is now producing more aircraft than the entire Nazi and Jap production is because the industry has made it possible for employes to build planes figuratively in their own back yards. This map of a major part of Los Angeles County shows the distribution of more than 2,500 warplane assembly, feeder and subcontracting plants which relieve congestion in the metropolitan area of Los Angeles, and reduce transportation and housing difficulties. Each dot represents a plant.

Manufacturing Briefs

FORD MOTOR COMPANY's electroplating department, said to be the largest in the world, is to be enlarged to provide facilities for lead, indium, silver, and lead flash treatment of bearings used in Pratt & Whitney aircraft engines. Five bays, each 160 feet by 25 feet, are being constructed.

SPEEDWALL CO., Seattle, Wash., has been purchased by Timber Structures, Inc., said to be the largest producer of wood trusses, arches, and columns in the Northwest. Speedwall, formerly engaged in making plywood panels, is now producing airplane parts.

NORRIS STAMPING AND MANUFACTURING CO., Los Angeles, is said to be the first war plant west of the Rockies to have won a fourth star on its Army-Navy "E" pennant.

ELASTIC STOP NUT CORP. announces that self-locking stop nuts of the type used in all U. S. planes are now being produced at the highest rate in history, with production for a single month, well into the hundreds of millions of units, almost double the monthly production of six months ago.

TITEFLEX METAL HOSE CO. Newark, N. J., has changed its corporate name to Titeflex, Inc. The company has specialized in the manufacture of flexible metallic tubing for the conveyance of fluids and gases for general industrial and automotive application since 1914.

CONTINENTAL CAN CO., SWEDLOW AEROPLASTIC CORP., and MARCO CHEMICALS, Inc., have jointly agreed to pool their techniques and production facilities so that airplane parts made from the new MR-type synthetic resins will be available for Army and Navy planes. The resins are manufactured by Marco. The combined efforts of the three companies will be concentrated for the present on production of laminated fibre-resin compositions made of paper, cotton cloth, glass cloth, asbestos, and wood veneer, says a joint announcement.

SIKORSKY AIRCRAFT, division of United Aircraft Corp., has designated Hedstrom-Union Co., Fitchburg, Mass., as builders of the large and small rotor blades for helicopters invented by Igor I. Sikorsky.

GULF OIL CORP. announces that a Thermofor catalytic cracking plant has been put into operation at its Port Arthur, Tex., refinery. The new unit, second of the type to be completed since its development several years ago, produces butylene, the basic ingredient of butadiene, used in the manufacture of synthetic rubber, and also a blending component of aviation grade gasoline.

HUB INDUSTRIES, Inc., has established a special development division at Stamford, Conn., to study postwar applications of hydraulics to other industries. The new division will function independently of Hub's Long Island City plants in which hydraulic aircraft equipment is produced for Allied airplanes.

WHAT'S THIS MAN'S ARMY COMIN' TO ?

It's like I was sayin' to the lootenant just the other day. "Sir," I says, "there's times when I wonder what this man's army is comin' to. Man and boy, I been soldierin' thirty years now, but lately I'm beginnin' to wonder.

"First they take the cavalry and put 'em in tanks . . . or mechanized cavalry they call it! Mebbe it's all right but, personally, I can't see what business any self-respectin' cavalryman has in one of them king-size sardine cans.

"But that ain't all, sir," I says. "Now they've cooked up this here air-borne infantry.* I seen plenty in my day, from Panama to Shanghai to ole Paree, but I never thought I'd live to see the day when them foot-sloggin' G.I.'s would be ridin' around in airplanes.

"I ask you, sir. Ain't there *nothin'* sacred no more?"

** For the edification of the Sarge (bless his antiquated soul), the air-borne infantry—like the mechanized cavalry—was created to give our army the added speed, mobility and hitting power so strikingly demonstrated in Sicily. And also for his information, we'd like to add that the air-borne infantry's "airplanes" are often* WACO *gliders . . . designed by* WACO *. . . built by* WACO *and fifteen other manufacturers using* WACO *design and engineering supervision.*
THE WACO AIRCRAFT COMPANY, *Troy, Ohio, U. S. A.*

WACO AIRPLANES

ALL ARMY CARGO-TRANSPORT GLIDERS ARE WACO DESIGNED

IRVIN

SYMBOL OF SAFETY

The name "IRVIN" on the harness means the chute is produced in an Irvin Factory with over 20 years of experience and skill in chute-making. Literature can be had by school or training executives for the asking. Address Main Office, Buffalo, N. Y.

THE CATERPILLAR CLUB

Founded in 1920. There is only one qualification for a life membership: in an emergency men and women who have saved their lives with Irvin Air Chutes. The word CATERPILLAR and representation of a caterpillar are registered trade-mark features of Irving Air Chute Co., Inc. We are anxious that the records of the Club be kept as complete as possible in the Club Register and members, upon enrollment, will receive a caterpillar token with the name inscribed thereon. Communicate with our Main Office.

IRVING AIR CHUTE CO., INC.

1670 Jefferson Ave. Buffalo 8, N. Y.

Other factories in United States, Canada and England

IRVIN Air Chutes

SERVING THE UNITED NATIONS' AIR FORCES

Aviation Securities Over the Counter

(Courtesy Merrill Lynch, Pierce, Fenner, and Beane)

	Close of Business December 24 Bid	Asked	December 31 Bid	Asked
AIRLINES				
All American Aviation	3⅞	4⅛	3⅞	4⅛
American Airlines, Pfd.	110½	112	110	112
American Export Airlines	28½	29½	28½	29½
Braniff	12¾	13	13	13⅛
Chicago & Southern Com.	12	12½	12¼	12⅝
WTS	4	5	4½	6
Continental Airlines	8	8½	8¼	8⅝
Delta Air	24½	26	24½	26
Inland Airlines	3⅛	5/8	3¼	⅝
Mid Continent	5	5¼	5¼	5½
National	13	13¾	13	13⅜
Northeast Airlines	6⅝	7	6⅝	7
Penn Central Airlines Pfd.	29	30	29	30
MANUFACTURERS				
Aeronca	3⅝	4	3⅝	4
Air Associates Com.	8½	¾	9	¼
Aircraft and Diesel	1	1½	1	1⅛
Aircraft Accessories	2	2⅛	2	2⅛
Airplane and Marine	1¼	¾	1¼	¾
Airplane Mfg. & Supply	65c	75c	65c	75c
Central Airports	5/8	⅞	5/8	⅞
Columbia Aircraft Prod.	¼	½	¼	½
Continental Aviation	3⅜	¾	3⅜	¾
Delaware Aircraft Pfd	¼	¾	¼	⅝
General Aviation Equip	1¾	2¼	1⅜	2¼
Globe Aircraft	½	1½	½	1⅛
Harlow Aircraft	⅛	¼	⅛	¼
Harvill Aircraft Com.	0	¼	0	¼
Harvill Aircraft Pfd.	60c	80c	60c	80c
Interstate Aircraft & Eng.	4¾	5½	4¾	5½
Jacobs Aircraft	2¾	3	2¾	3
Kellett Aircraft	1⅞	2⅛	1⅞	2⅛
Kenner Motors	70c	90c	70c	90c
Liberty Aircraft	9¾	10⅛	9¾	10⅛
Luscombe	3/8	5/8	½	¾
Menasco Mfg.	⅞	1	⅞	1
Northrop Aircraft	4½	5	4¾	5⅛
Piper Aircraft Com.	5	½	5	½
Piper Aircraft Pfd.	13¼	14	13½	14
Pitt. Aviation Pfd.	4½	6	4½	6
Rohr Aircraft	4¾	5¼	5¼	¾
Standard Aircraft	3	4	3	4
Taylorcraft Com.	1	1¼	1	1¼
Taylorcraft Pfd.	4	5	4½	5
Timm	30c	40c	30c	40c
United Aircraft Prod. Pfd.	15	16	15	16

Manufacturing Personnel

(Continued from page 84)

Wolf Garraway Lewis

John S. Garraway has been appointed sales manager of the hydraulics division of Adel Precision Products Corp.

The Weatherhead Co. announces creation of the new position of executive vice president, to be filled by **H. I. Lewis** of Hartford, Conn., an official of the American Hardware Co. **Henry F. Bailey,** Cleveland banker, has been appointed vice president in charge of finance.

Donald S. Wolf, former assistant service manager of Ranger Aircraft Engines Division, Fairchild Engine and Airplane Corp., has been promoted to service manager.

Belden wire is used on wiring assemblies on Lockheed planes.

ANOTHER PLACE WHERE BELDEN WIRE GOES TO WAR

This new reconnaissance bomber performs wonders on specialized jobs including that of tracking down U-boats. It has won for itself the name "Old Boomerang"—because it always comes back.

Here's another example of the way American ingenuity is defeating dictatorship. Here skilled workers are using service-tested materials in producing weapons that "stay on the job." Here's another place where Belden wire goes to war.

Back of Belden aircraft wire is a lifetime of experimenting and testing and collaboration with aircraft engineers since flying was in its infancy. This vast experience makes possible the Belden aircraft wire that meets today's needs.

Belden Manufacturing Company, 4691 W. Van Buren St., Chicago 44, Illinois

Awarded the U. S. Treasury Special Citation of Merit for initiating the War Bond-or-Cash Dividend Plan.

Belden *Aircraft* WIRE

Starter, Lighting, and Instrument Cables √ √ √ SPARK PLUG WIRES

Let's ALL
BACK THE
ATTACK WITH
WAR BONDS!

HOME OF THE Hawaiian Room
Hotel Lexington
800 ROOMS · CHARLES E. ROCHESTER, V. P. & Mng. Dir.
LEXINGTON AVE. AT 48th ST., N. Y. C. 17

B-H
MANUFACTURERS
of SHEET METAL and
TUBULAR ACCESSORIES

ALUMINUM
TANKS

CONTRACTORS TO ALL LEADING
ENGINE and PROPELLER
MANUFACTURERS

B-H AIRCRAFT CO.
LONG ISLAND CITY NEW YORK

Leading Aviation Stocks

New York Stock Exchange

(1943 Summary)

	Sales	High	Low	Net Change
American Airlines	189,900	76¼	52	+4
Aviation Corp.	2,301,700	6⅜	3⅛	+
Beech Aircraft	124,600	14⅜	7¼	...
Bell Aircraft	323,900	20½	9⅛	–
Bendix Aviation	349,000	39⅞	33	+
Boeing Airplane	557,000	21¼	11¾	–
Braniff Airways	53,300	14⅛	11¼	...
Consolidated Vultee	483,100	21½	9⅛	...
Consolidated Vultee pfd.	101,500	27¼	17½	...
Curtiss-Wright	1,749,300	9½	5½	–
Curtiss-Wright A	248,700	24½	14⅝	–
Douglas Aircraft	238,000	73½	44	–
Eastern Air Lines	224,700	44⅝	31¼	+
Ex-Cell-O	132,600	29¼	20	–
Grumman Aircraft Eng.	199,500	17¼	10⅛	+
Hayes Industries	83,900	10¼	6⅛	–
Lockheed Aircraft	813,300	25⅜	12½	–
Martin, Glenn L. Co.	494,100	24	14¾	–
National Aviation	175,800	13⅞	8⅛	+
North American Aviation	639,800	14¼	8	–
Northwest Airlines	135,200	23½	15⅛	+
Pan American Airways	1,053,500	43¼	23½	+
Penn Central Airlines	167,300	20¼	13	...
Sperry Corp.	408,700	35¼	23½	+
Thompson Products	70,500	34⅝	26¼	+
Trans & Western Air	202,600	25⅜	15¼	+
United Air Lines	853,100	33⅜	17¾	+
United Aircraft	749,200	40	24⅛	+
United Aircraft pfd.	69,300	114½	93½	+
Wright Aero	404,000	108	78¼	–

New York Curb Exchange

(1943 Summary)

	Sales	High	Low	Net Change
Aero Supply A	1,500	22½	20	...
Aero Supply B	95,300	5¼	3⅜	–
Air Associates	23,900	9⅛	5	+
Aircraft Accessories	271,400	4⅞	1⅝	+
Aro Equipment	15,900	10⅛	6¾	...
Bellanca Aircraft	92,100	5	2¼	+
Breeze Corp.	90,500	12⅜	7⅞	+
Brewster Aero	364,300	7⅝	2⅞	–
Cessna Aircraft	187,600	10½	4¾	–
Colonial Airlines	145,200	10½	3⅞	+
Fairchild Aviation	83,300	10⅝	6¾	+
Fairchild Eng & Air	272,400	3	1½	+
Irving Air Chute	31,800	10¾	7	+
Republic Aviation	364,000	5¾	2¾	+
Ryan Aero	62,400	5¼	2⅞	–
Solar Aircraft	99,000	4⅝	2⅛	+
United Aircraft Prod.	155,600	14½	6⅛	+
Waco Aircraft	16,800	5¼	2⅝	–
Western Air Lines	140,800	11½	5⅝	+

DPC Authorizations

DOUGLAS AIRCRAFT CO., INC., Santa Monica, Calif., for additional facilities at plants in Calif. and Mich. at a cost of about $3,500,000, overall commitment of about $9,700,000.

WELLMAN BRONZE & ALUMINUM CO., Cleveland, Ohio, for additional plant facilities at a cost of about $70,000, overall commitment of about $720,000.

WEBER SHOWCASE & FIXTURE CO., INC., Los Angeles, Calif., an execution of contract for plant facilities in Calif., at a cost of about $450,000.

FORD MOTOR CO., Dearborn, Mich., for additional equipment at Mich: plant at a cost of about $675,000, overall commitment of about $69,450,000.

VEGA AIRCRAFT CORP., Burbank, Calif., for additional plant facilities in Los Angeles County, at a cost of about $400,000, overall commitment of about $7,670,000.

CHRYSLER CORP., Detroit, Mich., for additional equipment at Mich. plant at a cost of about $40,000, overall commitment of about $815,000.

CONTINENTAL AVIATION & ENGINEERING CORP., Detroit, Mich., for additional plant facilities in Muskegon County at a cost of about $40,000,000, overall commitment of about $55,000,000.

BOWER ROLLER BEARING CO., Detroit, Mich., for additional equipment at Wayne County plant at a cost of about $150,000, overall commitment of about $1,350,000.

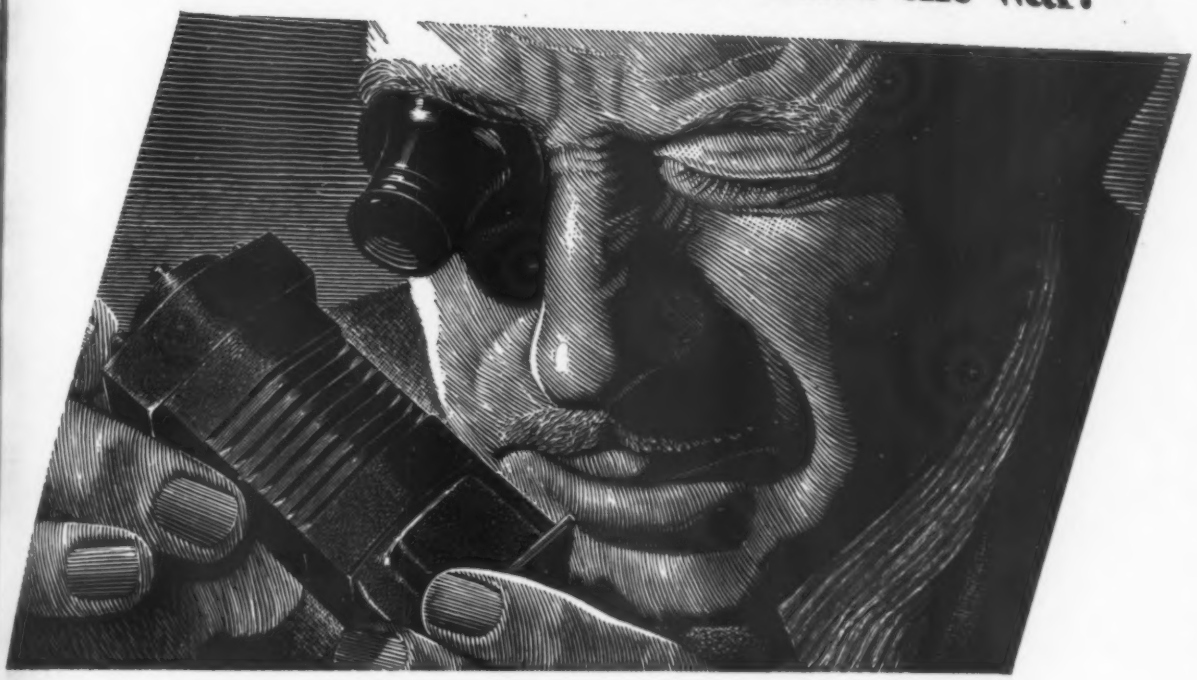
LAWRANCE ENGINEERING & RESEARCH CORP., Linden, N. J., for additional facilities at Union County plant at a cost of about $100,000, overall commitment of about $1,700,000.

CLARKE AERO-HYDRAULICS, INC., Pasadena, Calif., for additional equipment at Los Angeles County plant at a cost of about $80,000, overall commitment of about $9,750,000.

ROHR AIRCRAFT CORP., Chula Vista, Calif., to provide additional plant facilities in San Diego County, California, costing approximately $735,000, resulting in an overall commitment of approximately $4,000,000.

BEECH AIRCRAFT CORP., Wichita, Kans., to provide additional facilities at a plant in Sedgwick County, Kansas, costing approximately $3,000,000, resulting in an overall commitment of approximately $3,850,000.

Who can use this after the war?



So far this is definitely a war baby. It was born to meet an exacting wartime need. Every one that is made goes right into the fight.

It is an electric motor designed for jobs which no regular electric motor could fill.

The jobs are on America's fighting planes. Working control flaps—opening and closing cooling shutters—lifting landing gears—and the like.

Every ounce on an airplane is precious. So usual electric motors were out.

This one weighs as little as 8/10ths of a pound—others can move as much as 35 tons.

Naturally it took a whole new kind of engineering to make this motor.

It took new ideas from the drawing board up. It took new materials—like glass-insulated wire—to build it. It required finer, more precise craftsmanship than had ever gone into a motor before.

After the war, these motors can be sold to manufacturers of peacetime products.

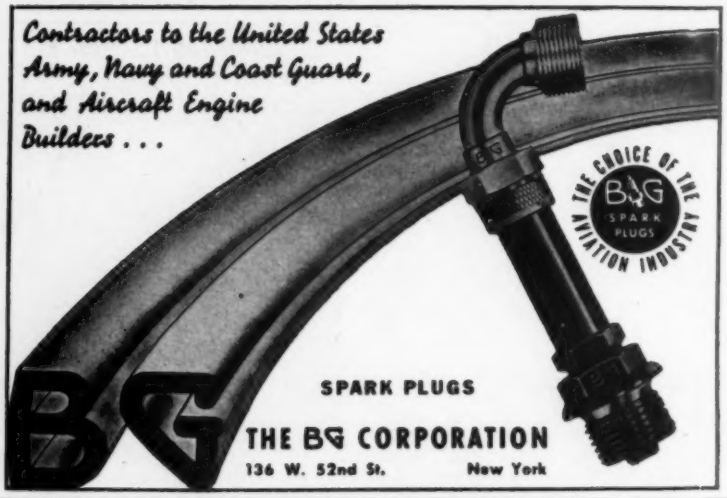
That is why we are telling you about them now.

You may have need for such a compact, ultra-efficient source of power. You may be able to use the kind of engineering thinking that developed it—or the production technique that builds it and about 250 other Lear products.

PLANTS: Piqua, O., and Grand Rapids, Mich. BRANCHES AT: New York, Los Angeles, Chicago, Detroit, Cleveland, Providence.

LEAR AVIA INC.
PIQUA · OHIO

Contractors to the United States Army, Navy and Coast Guard, and Aircraft Engine Builders . . .



SPARK PLUGS

THE BG CORPORATION

136 W. 52nd St. New York

WORLD'S PREMIER AIRPLANE FABRIC

LIGHTER STRONGER SMOOTHER

FLIGHTEX

ATLANTIC RAYON CORP. • INDUSTRIAL FABRICS DIVISION
350 Fifth Avenue New York 1, N. Y.

Leading Manufacturers of Fabric and Tapes for the Aircraft industry.

FLIGHTEX FABRIC

Export Representative—Aviquipo, Inc., 25 Beaver St., N. Y. Cable Add.: 'Aviquipo'

Aircraft Computers

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Financial Briefs

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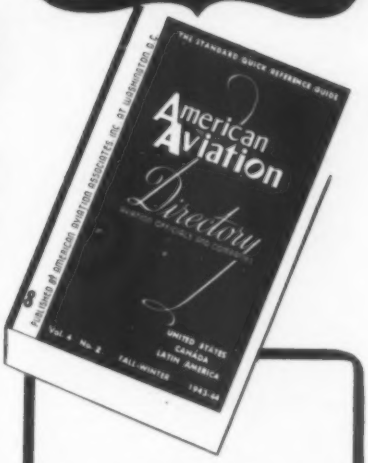
1943 - 44
FALL - WINTER
EDITION



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Executives of those Companies and Organizations, with Titles, Addresses, Telephone Numbers of each.

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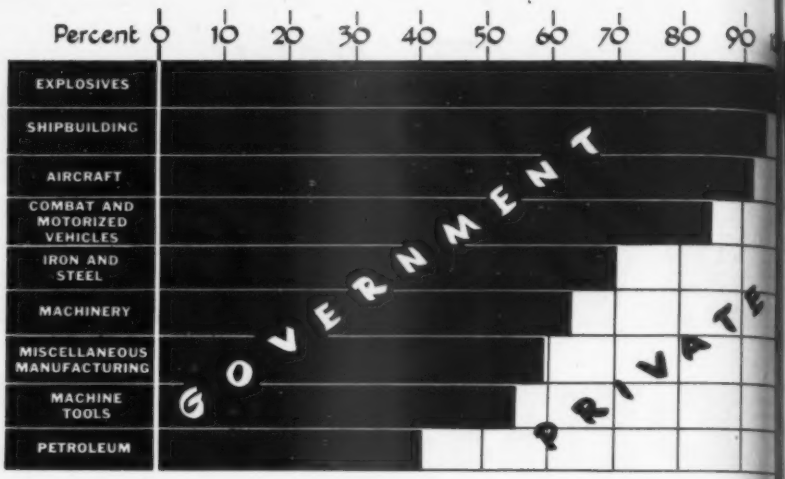

Who will own the nation's tremendous aircraft manufacturing plants after the war and what will be done with the surplus facilities not needed to supply the peacetime market remain the most baffling questions faced by both the industry and the government. The above chart emphasizes the predominance of government finances in aircraft plants, and the major proportions the problem will take when war planes are no longer needed in quantity.

Latest figures show that Reconstruction Finance Corp. has built and owns 521 aircraft, engine and parts plants at a total cost of $2,700,000,000—ten times the privately owned investments in the industry. It has financed construction of 50 high octane aviation gasoline plants at a cost of $500,000,000. Twenty of these are owned outright by RFC.

New Plants

Largest Plant Opens

The nation's largest war plant, the Dodge Division of the Chrysler Corporation on Chicago's South Side, opened last fortnight. It sprawls over 500 acres of land and has 19 buildings. It has 14 cafeterias. A parking lot a mile and a quarter long will accommodate 14,000 automobiles. The plant is turning out engines for Army bombing planes.

New Plant for Clark

The Robert H. Clark Co., Los Angeles, announces completion of a new plant at 9330 Santa Monica Blvd., Beverly Hills, where facilities for increasing the production of adjustable cutting tools and the company's automatic tapping machine conversion unit have been provided.

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• AVIATION DIVISION •

Manufacturer Opposes Continuation of Aviation Training Subsidies After War

STRONG opposition to continuation of subsidized aviation training and educational programs after the war was voiced last fortnight by a spokesman for one of the large aircraft manufacturing companies in response to queries on the subject originated by W. A. Mara of Consolidated Vultee Aircraft Corp., vice chairman of the Personal Aircraft Dept. of the Aeronautical Chamber of Commerce.

This manufacturer, who asked to remain anonymous, declared that the principle involved is far greater than any "self interest" the industry might derive from subsidized programs.

"Subsidies and enterprise are simply incompatible bedfellows," he wrote, "and it is grossly inconsistent, to say the least, for this industry to preach free enterprise, lower taxes and less regulation on one hand and yet yell for subsidy on the other."

He pointed out it would be impossible to foretell what would happen to our whole economic structure if each of the many industries went to the Government and asked for subsidies. "If we want to avoid a chaotic economic future—not to mention the destruction of our enterprise system—then the place to start guarding against it is right in our own industry by refusing to be a party to any unnecessary demands on the public treasury."

He asserted that the military services will have far more than enough instructors and equipment with which to maintain an even and adequate flow of trained pilots and other personnel to meet its needs for years to come. Pointing out that manufacturers and commercial aviation alike met the war crisis, he challenged: "Has the unsubsidized American airplane industry not adequately responded to this emergency and is it not licking the subsidized industries of our enemy?"

"American enterprise met the call this time and it will do it again, but only by the same old tried and proven enterprise system that we have known in the past, and not by a subsidized substitute for the initiative that has characterized this industry since the day of its birth."

Arguing against the principle involved, he charged that those who favor subsidized programs do not stop to think that subsidies increase taxes and regulation and that subsidies likewise tend to wither initiative and resourcefulness.

He cited the automobile industry as a classic example of development without subsidy. "Wouldn't it have sounded ridiculous to us," he asked, "for the automobile industry to have demanded that the Government subsidize and install training courses in the grade schools, high schools, etc. so that every child could grow up to become an automobile driver or mechanic, and understand the structure and mechanics of an automobile . . . so he wouldn't be afraid of them, and so that he might possibly buy one sometime."

"The airplane industry was making pretty fair progress—for a youngster—up to the war. It showed a reasonable increase in number of pilots and planes produced each year, and I am sure that if it is left to grow in its own natural way, that it will continue to progress. Aviation in all its phases has its own appeal and attraction. It will continue to attract those who want to follow it and who want to work for a place in it, just as the automobile industry did. I am afraid that the trouble is that some of us are getting impatient in the progress of the industry, and that instead of being satisfied with a normal and natural development we want to inject synthetic stimulants so as to speed up the process."

Cessna Will Make Bomber Parts; Less Need for Trainers

Cessna Aircraft Co. is converting its production facilities to the manufacture of component parts for tactical bombers, Dwane L. Wallace, president, revealed last fortnight in his annual report to company stockholders.

"The need of twin engine training and utility cargo airplanes in our country's war effort is declining, and the production of the type airplanes which your company has on order will be completed in the very near future," he explained. "A conversion is presently being made in both of your company's plants to enable these plants to manufacture major component parts for tactical bombers currently being produced. The introduction of this subcontract work will fully utilize the production facilities of both plants as the production of twin engine trainers and cargo airplanes ceases."

Wallace revealed that Cessna's postwar plans are being "carefully worked out." A provision for conversion from war to peacetime operations was made out of the earnings of fiscal year 1943 in the amount of $831,568, bringing the total reserve for this purpose to $1,586,030, he said.

Cessna's annual report reveals a net profit of $2,208,414 after charges, Federal taxes, and the $831,568 reserve. Net is equal to $6.31 a share on $350,000 shares of capital stock.

This compares with a net profit of $738,202, or $2.11 a share, reported in the preceding year. This net was after reserve of $1,254,462 for policy adjustments and conversion from war to peacetime operation and a $4,800,000 provision for a refund on U. S. Government contracts.

Federal normal income tax provision for the year was $198,897 and federal excess profits taxes were $7,484,111 after deducting postwar tax refund of $831,568, while state income taxes were $59,009, a total of $7,742,017. In the preceding year federal normal income tax provision was $751,511, federal excess profits taxes totaled $4,550,300, and state income taxes amounted to $41,141, a total of $5,342,952.

Net sales after price adjustments for the year were $70,729,401 as compared with $31,920,529 in the previous year.

1,000 Workers Laid Off

The Euclid, O., plant of Thompson Aircraft Parts Co. laid off 1,000 workers last fortnight because of a "sudden sharp cutback in military aircraft valves and parts orders."

Awarded 15-Year Pin

Frederick B. Rentschler, chairman of United Aircraft Corp., is shown (left) presenting 15-year pin to Joseph F. McCarthy, controller of the corporation. H. Mansfield Horner, president, looks on. McCarthy has been the chief financial officer of United Aircraft since its organization in 1934.

Laister-Kauffmann Firm Acquires Bowlus Company By Exchange of Shares

Laister-Kauffmann Aircraft Corp., St. Louis, has acquired Bowlus Sailplanes Co., Inc., Los Angeles, through an exchange of stock, a joint statement of the two firms reveals. Stockholders of Bowlus will receive stock in Laister-Kauffmann, profit sharing certificates, and an option to purchase additional L-K shares.

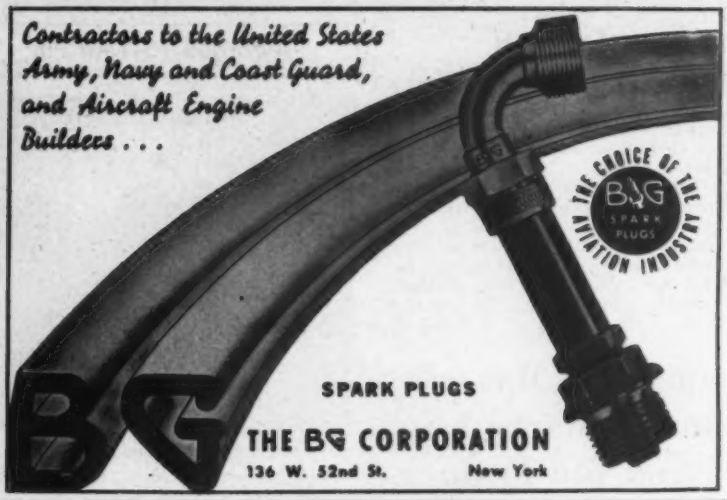
The Bowlus company was founded in 1939 to take over the glider business of Hawley Bowlus, who had developed an outstanding single place glider, the Baby Albatross. Prior to the war the Bowlus company received a contract for the construction of troop carrying gliders in two sizes, and an after-war contract to construct trainer gliders. The war, however, cut off all civilian aviation and put a stop to all sales.

On the board of directors of Bowlus are Donald W. Douglas, president, Douglas Aircraft Company, Inc.; Albert C. Essig, The Essig Company, Ltd.; Reuben Fleet, Consolidated-Vultee; Carl Squier, vice president Lockheed; Tom Wolfe, vice president Western Air Lines; Dwight Whiting, director of Douglas, and Col. Edward S. Evans, president Evans Car Loading Co. Stockholders include Jack Frye, TWA; Robert Gross, Lockheed; Ronald Burla, North American; and John Northrop, Northrop Aircraft.

Laister-Kauffmann is headed by John W. Laister, president, and John R. Kauffmann, secretary-treasurer. The company has been successful in developing a glider which has been standardized for Army training.

McDonnell Dividend

McDonnell Aircraft Corp. directors declared a regular quarterly dividend of $1.50 per share on the company's preferred stock, payable Jan. 1 to stockholders of record Dec. 27.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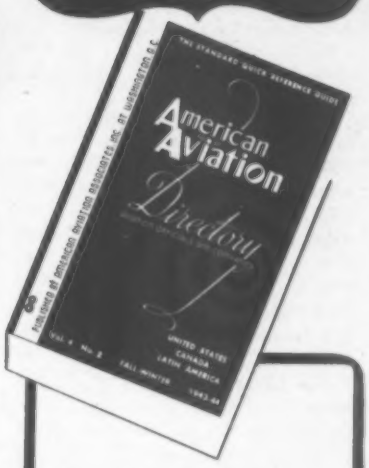

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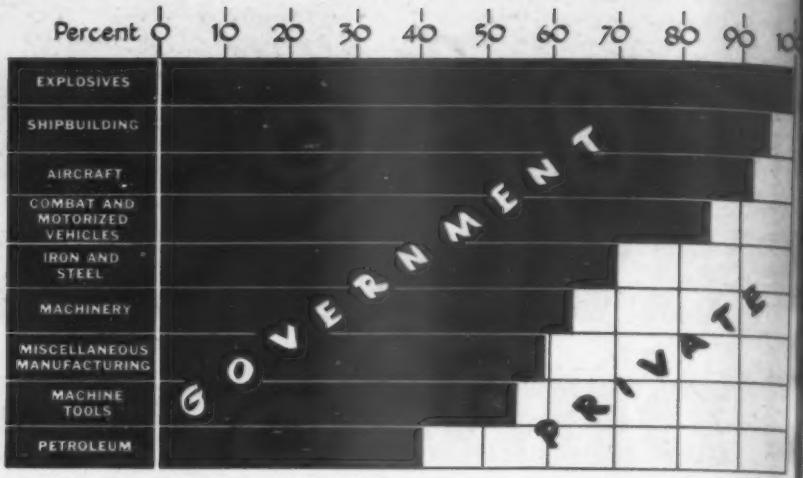
Wittek Manufacturing Company	6
Wright Aeronautical Corporation	38A



Who will own the nation's tremendous aircraft manufacturing plants after the war and what will be done with the surplus facilities not needed to supply the peacetime market remain the most baffling questions faced by both the industry and the government. The above chart emphasizes the predominance of government finances in aircraft plants, and the major proportions the problem will take when war planes are no longer needed in quantity.

Latest figures show that Reconstruction Finance Corp. has built and owns 521 aircraft, engine and parts plants at a total cost of $2,700,000,000—ten times the privately owned investments in the industry. It has financed construction of 50 high octane aviation gasoline plants at a cost of $500,000,000. Twenty of these are owned outright by RFC.

New Plants

Largest Plant Opens

The nation's largest war plant, the Dodge Division of the Chrysler Corporation on Chicago's South Side, opened last fortnight. It sprawls over 500 acres of land and has 19 buildings. It has 14 cafeterias. A parking lot a mile and a quarter long will accommodate 14,000 automobiles. The plant is turning out engines for Army bombing planes.

New Plant for Clark

The Robert H. Clark Co., Los Angeles, announces completion of a new plant at 9330 Santa Monica Blvd., Beverly Hills, where facilities for increasing the production of adjustable cutting tools and the company's automatic tapping machine conversion unit have been provided.

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